University of Malta

Faculty of Economics, Management and Accountancy

Executive Master's in Business Administration (M.B.A)

EXPLORING ESG PERCEPTIONS AMONG MARITIME STAKEHOLDERS: OPPORTUNITIES, CHALLENGES, AND IMPLICATIONS

by:

PAUL ANTHONY BUHAGIAR

A thesis submitted in partial fulfilment of the requirements of the award of Executive master's in business administration of the University of Malta, on the 25th of September 2023.

The research work disclosed in this publication is funded by the Tertiary Education Scholarships Scheme (TESS).

L-Università ta' Malta

FACULTY OF ECONOMICS, MANAGEMENT & ACCOUNTANCY

DECLARATIONS BY POSTGRADUATE STUDENTS

(a) Authenticity of Dissertation

I hereby declare that I am the legitimate author of this Dissertation and that it is my original work.

No portion of this work has been submitted in support of an application for another degree or qualification of this or any other university or institution of higher education.

I hold the University of Malta harmless against any third party claims with regard to copyright violation, breach of confidentiality, defamation and any other third party right infringement.

(b) Research Code of Practice and Ethics Review Procedures

I declare that I have abided by the University's Research Ethics Review Procedures. Research Ethics & Data Protection form code FEMA-2022-00438.

As a Master's student, as per Regulation 77 of the General Regulations for University Postgraduate Awards 2021, I accept that should my dissertation be awarded a Grade A, it will be made publicly available on the University of Malta Institutional Repository.

02.2023

ABSTRACT

This research delves into the perceptions, awareness, and implications of Environmental, Social, and Governance (ESG) principles among maritime stakeholders. Focusing on the maritime industry, the study employs a multi-layered approach to explore stakeholders' understanding of ESG concepts and their demographic influences.

The investigation employs both descriptive statistics and advanced statistical analyses, including t-tests and ANOVA tests, to unravel the intricate relationship between ESG and demographics. Through factor analyses, the research shall aim to identify distinct factors that shape stakeholders' perceptions of ESG. Additionally, the study probes the impact of gender, age, occupation, and years of experience on ESG awareness and implications.

The results provide detailed insights, revealing that gender, age, and occupational differences within the maritime industry, shall significantly influence stakeholders' views on ESG principles. The research highlights the importance of demographic factors in shaping perceptions of ESG and offers valuable implications for decision-makers and industry practitioners. This study contributes to a deeper understanding of the interplay between demographics and ESG perceptions within the maritime sector, shedding light on the pathway to a more sustainable and responsible maritime industry.

ACKNOWLEDGEMENTS

Firstly, the writer wishes to express sincere thanks to Prof. Simon Grima, the supervisor, whose exceptional knowledge of ESG and invaluable guidance made this research possible. Additionally, the author extends sincere appreciation to all the participants who, in one way or another, contributed to the completion of surveys, providing crucial insights into the sentiments of the maritime industry. This research owes its success to the unwavering dedication and support of these maritime professionals.

Moreover, the author extends special gratitude to his mother, Violet, and sister, Stefania, for their consistent care and unwavering support over the years.

Last but not least, the author wishes to express his genuine appreciation to his beloved wife, Maria, and their cherished son, Zach, who has brought immeasurable joy into their lives. Maria's continuous love, support and encouragement, together with Zach's innocence and boundless curiosity, have provided the author with the strength to persevere through the challenges brought about by this MBA journey.

TABLE OF CONTENTS

ABSTRACT i

ACKNOWLEDGEMENTS iii

TABLE OF CONTENTS iv

LIST OF FIGURES ix

LIST OF TABLES xi

LIST OF ABBREVIATIONS xiii

1. INTRODUCTION 1

1.1 Chapter 1 - Introduction 1

1.2 Introduction to *ESG*. 1

1.3 The ESG Concept Amongst Maritime Stakeholders 2

1.4 Research Aims and Objectives 3

1.4.1 Addressing Potential Research Bias 4

1.5 Overview of Research 5

1.6 Chapter 1 – Conclusion 6

2. LITERATURE REVIEW 7

2.1 Chapter 2 – Introduction 7

2.2 ESG 7

2.2 The origin of ESG 8

2.2.1 ESG in the 1900's 9

2.2.2 ESG in the 21st Century 10

2.3 EU's ESG Reporting requirements 15

2.3.1 European Sustainability Reporting Standards (ESRS) 17

2.3.2 CSRD/ESRS Implementation Timeline 18

2.4 ESG in the shipping sector 19

2.4.1 'E' in Maritime ESG 22

2.4.2 'S' in Maritime ESG 24

2.4.3 'G' in Maritime ESG 25

2.4.4 Analysis of ESG Reporting by Shipping Sector 26

2.4.5 ESG Challenges Faced by Maritime Stakeholders 28

2.4.5.1 Climate Change and Decarbonization Challenges 28

2.4.5.2 Financing and Investment Challenges 28

2.4.5.3 Regulatory and Compliance Challenges 29

2.4.5.4 Transparency and Data Challenges 29

2.4.5.5 Unprecedented Challenges Specific to the Maritime Sector 30

2.4.5.6 Standardization and Accountability Challenges 30

2.4.6 Existing ESG Opportunities 31

2.4.6.1 Green Financing 31

2.4.6.2 Functional and Emotional Benefits: 32

2.4.6.3 Support and Investment by Government Stakeholders 32

2.4.6.4 Environmental, Social and Governance Opportunities: 33

2.5 Gaps Found in Literature 35

2.6 Chapter 2 - Conclusion 36

3. RESEARCH DESIGN, APPROACH & METHODOLOGY 37

3.1 Chapter 3 - Introduction 37

3.2 Prisma Analysis – ESG in Maritime 39

3.3 Business and Management Research Philosophy 41

3.4 Sampling Frame and Research Population 42

3.5 Compiling The Likert Survey 48

3.6 Statistical Analysis Methodology 58

3.7 Matters of Ethical Significance 58

3.8 Chapter 3 - Conclusion 60

4. RESULTS 61

4.1 Chapter 4 – Introduction 61

4.2 Participant's Demographics 61

4.3 Cronbach's Alpha Analysis 69

4.4 Confirmatory Factor Analysis (CFA) 74

4.4.1 Structural Equation Modelling (SEM) 75

4.5 DESCRIPTIVE STATISTICS 78

4.5.1 Hypothesis 1 – Familiarity and Engagement With ESG 79

4.5.2 Hypothesis 2 – ESG Standards and Transparency 82

4.5.3 Hypothesis 3 – Prioritizing esg aspects for long-term success 85

4.5.4 Hypothesis 4 – Leveraging Sustainability for Competitive Edge 88

4.5.5 Hypothesis 5 – Environmental Benefits and Risk Perception 91

4.5.6 Hypothesis 6 – Financial Incentives and Brand Enhancement 94

4.3.6 Hypothesis 7 – Challenges in ESG Compliance and Investments 97

4.3.8 Hypothesis 8 – Transparency and Competition 100

4.3.9 Hypothesis 9 – Operational Challenges in the Maritime Sector 103

4.3.10 Hypothesis 10 – Regulatory Uncertainty 106

4.4 Summarised Graph representations According to Grouped Demographics 109

4.5 Chapter 4 - Conclusions 112

5. DISCUSSION 113

5.1 Chapter 5 - Introduction 113

5.2 GENERAL STATISTICAL DISCUSSION 113

5.3 Descriptive Statistics, T-Tests and ANOVA Test Discussion According to Factorised Hypotheses 114

5.3.1 Hypothesis 1 Analysis Discussion 114

5.3.2 Hypothesis 2 Analysis Discussion 118

5.3.3 Hypothesis 3 Analysis Discussion 122

5.3.4 Hypothesis 4 Analysis Discussion 126

5.3.5 Hypothesis 5 Analysis Discussion 130

5.3.6 Hypothesis 6 Analysis Discussion 135

5.3.7 Hypothesis 7 Analysis Discussion 139

5.3.8 Hypothesis 8 Analysis Discussion 143

5.3.9 Hypothesis 9 Analysis Discussion 147

5.3.10 Hypothesis 10 Analysis Discussion 151

5.4 Research Objectives Validation 155

5.5 Chapter 5 – Conclusion 156

6. CONCLUSION 157

6.1 Chapter 6 - Introduction 157

6.2 Research Findings 157

6.3 Research Limitations 159

6.4 Research Contributions and Implications of the Findings 160

6.5 Possible Future Research 161

6.6 Chapter 6 - Conclusion 162

7. REFERENCES 163

ANNEX I - PRISMA ANALYSIS 171

ANNEX II –LIKERT SURVEY RESULTS – Section A 182

ANNEX III –LIKERT SURVEY RESULTS – Section B 189

ANNEX IV –LIKERT SURVEY RESULTS – SECTION C 196

ANNEX V –LIKERT SURVEY RESULTS – SECTION D 203

ANNEX VI –LIKERT SURVEY RESULTS – SECTION E 210

ANNEX VII –LIKERT SURVEY RESULTS – SECTION F 217

ANNEX VIII –LIKERT SURVEY RESULTS – SECTION G 224

ANNEX IX –LIKERT SURVEY RESULTS – SECTION H 231

ANNEX X –LIKERT SURVEY RESULTS – SECTION I 238

ANNEX XI –LIKERT SURVEY RESULTS – SECTION J 245

LIST OF FIGURES

Figure 1 The Development of ESG over Time. Adapted from (Lykkesfeldt, 2022) 9

Figure 2 Scope of Companies to Report ESG Compliance according to ESRS adapted from (Watkins, 27 January 2023). 16

Figure 3 Implementation Timeline (Watkins, 27 January 2023) 18

Figure 4 International Conventions and Codes Pertaining to the Environment (Organisation, 2019) 20

Figure 5 International Conventions and Codes pertaining to the Social Element (Organisation, 2019) 20

Figure 6 International Conventions and Codes pertaining to the Governance Element (Gritsenko, 2015) 21

Figure 7 The Four Poseidon Principles 23

Figure 8 ESG Reporting according to Shipping Sector/ Category adapted from (Deloitte, 2021) 26

Figure 9 Percentage Ship Owning Companies (from Sample investigated) compared with the rating agencies utilised (Deloitte, 2021) 27

Figure 10 Research Flow Chart 38

Figure 11 PRISMA Literature Analysis of ESG in Maritime 40

Figure 12 Questionnaire Introduction 49

Figure 13 Consent Form 50

Figure 14 Participants According to Gender 65

Figure 15 Age Group Demographic 66

Figure 16 Occupation Demographics 67

Figure 17 Years of Experience Demographic 68

Figure 18 Confirmatory Factor Analysis Diagram using AMOS SPSS 77

Figure 29 Summarised Age Groups plotted according to hypotheses. 109

Figure 30 Summarised Occupations plotted according to hypotheses. 110

Figure 31 Summarised Years of working in the sector plotted according to hypotheses. 111

Figure 19 Hypothesis 1 Graphical Representation 115

Figure 20 Hypothesis 2 Graphical Representation 119

Figure 21 Hypothesis 3 Graphical Representation 123

Figure 22 Hypothesis 4- Graphical Representation 127

Figure 23 Hypothesis 5 Graphical Representation 131

Figure 24 Hypothesis 6 Graphical Representation 136

Figure 25 Hypothesis 7 Graphical Representation 140

Figure 26 Hypothesis 8 Graphical Representation 144

Figure 27 Hypothesis 9 Graphical Representation 148

Figure 28 Hypothesis 10 Graphical Representation 152

LIST OF TABLES

Table 1 The 17 UN SDG together with why they have been introduced and what is expected from the global community (adapted and referenced from (UN, 2023) 12

Table 2 the 17 SDGs categorised in the three ESG pillars adapted from (Skaug, July 2021). 13

Table 3 Maritime Stakeholders Participants 43

Table 4 Google Forms Sample Survey as Submitted by Stakeholders 50

Table 5 Likert Survey Causal Indicators 52

Table 6 Demographic Survey Results (before grouping) 63

Table 7 Demographic Survey Results (after grouping) 64

Table 8 Cronbach's Alpha applied to the different Hypotheses. 70

Table 9 Various Statistical Models used to Investigate the Model Fit Assessment adapted from (Byrne, 2001) & (Holmes-Smith, 2002) 75

Table 10 Hypothesis 1 Statistical Analysis 79

Table 11 Hypothesis 2 Statistical Analysis 82

Table 12 Hypothesis 3 Statistical Analysis 85

Table 13 Hypothesis 4 Statistical Analysis 88

Table 14 Hypothesis 5 Statistical Analysis 91

Table 15 Hypothesis 6 Statistical Analysis 94

Table 16 Hypothesis 7 Statistical Analysis 97

Table 17 Hypothesis 8 Statistical Analysis 100

Table 18 Hypothesis 9 Statistical Analysis 103

Table 19 Hypothesis 10 Statistical Analysis 106

Table 20 Hypothesis 1 Discussion 114

Table 21 Hypothesis 2 Discussion 118

Table 22 Hypothesis 2 Discussion 122

Table 23 Hypothesis 4 Discussion 126

Table 24 Hypothesis 5 Discussion 130

Table 25 Hypothesis 6 Discussion 135

Table 26 Hypothesis 7 Discussion 139

Table 27 Hypothesis 8 Discussion 143

Table 28 Hypothesis 9 Discussion 147

Table 29 Hypothesis 10 Discussion 151

LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
BWM	International Convention for the Control and Management of Ships' Ballast Water and Sediments
CERES	Coalition for Environmentally Responsible Economies
CO_2	Carbon Dioxide
COLREG	Convention on the International Regulations for Preventing Collisions at Sea, 1972
COVID-19	Coronavirus Disease 2019
CR	Composite Reliability
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
EEDI	Energy Efficiency Index
EFRAG	European Financial Reporting Advisory Group
ESG	Environmental, Social and Governance
EU	European Union
GHG	Greenhouse Gas Emissions
IACS	International Association of Classification Societies
IMO	International Maritime Organization
ISSB	International Sustainability Standards Board
ITF	International Transport Worker's Federation
MARPOL	International Convention for the Prevention of Pollution from Ships
MLC	Maritime Labour Convention, 2006

NFI	Normed Fit Index
OCIMF	Oil Companies International Marine Forum
P&I	Protection and Indemnity Insurance Clubs
PBR	Price-Book-Value Ratio
PER	Price Earnings Ratio
PRI	Principles for Responsible Investment
RMSEA	Root Mean Square Error of Approximation
ROE	Return on Equity
ROI	Return on Investment
SAR	International Convention on Maritime Search and Rescue (SAR)
SASB	Sustainability Accounting Standards Board
SDG	Sustainability Development Goals
SOLAS	International Convention for the Safety of Life at Sea
SPSS	Statistical Package for the Social Sciences
SRI	Socially Responsible Investment
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
TLI	Tucker Lewis Index
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development

Dedicated in loving memory of my late father

Prof. Anton Buhagiar,

whose resolute commitment to academia inspires my continuous pursuit of knowledge.

1. INTRODUCTION

1.1 CHAPTER 1 - INTRODUCTION

Chapter 1 serves as an introduction to the topic of ESG within the context of the maritime industry. It highlights the growing importance of non-financial indicators used by investors to evaluate a company's sustainability practices. The research is also introduced by presenting the aims and objectives of this study, followed by a structured overview of this dissertation. Finally, potential research bias is addressed.

1.2 INTRODUCTION TO *ESG.*

A Company's financial position, relative to other competing businesses, is conventionally established through the use of financial performance indicators, such as Return on Investments (ROI), Return on Equity (ROE), Price Book-Value Ratio (PBR), Price-Earnings Ratio (PER) and future cash flows (Tadahiro, 2021). However, today's heavily competitive international markets, require additional tangible factors that measure a company's effort towards demonstrating sustainability. These are a set of non-financial indicators that allow for investment decisions to be taken soundly by the top management whilst demonstrating a continuous commitment to its shareholders. These factors comprise of three governing pillars, namely *Environmental*, *Social* and *Governance* aspects, often denoted as simply, *ESG* (J. Wu, 2020). The use of these three *ESG* pillars have become increasingly essential as of late, especially in desperate times, which call for desperate measures.

The occurrence of crises like the 2008 financial collapse, and particularly the more recent COVID-19 pandemic, has caused a transformation in the business practices of companies. They now constantly seek innovative financing approaches that enable the organization to thrive, even in the face of challenging and extraordinary circumstances. (J. Wu, 2020). One way of financing a company during such turbulent times is by borrowing capital from banks, investors, and other financial organisations, taking the form of bonds or debts. Seeing that equity financing is usually considered more expensive to upkeep, companies have often resorted to borrowing finances directly from banks, in a bid to invest in newer opportunities. The maritime industry, particularly the shipping sector, is no different.

1.3 THE ESG CONCEPT AMONGST MARITIME STAKEHOLDERS.

Shipping is a highly competitive market, that generates limited cash flow (Xiumei, 2020). In this respect, ship owners strive to invest in new, innovative and cutting-edge ideas and assets, requiring flexible yet substantial capital from several venture capitalists (Xiumei, 2020), in order to maintain an ongoing return for their investments.

Conversely, during difficult periods like the aforementioned COVID-19 pandemic, banks and other financial institutions have been prompted to reconsider their lending policies when providing capital to their ship owning clients. These lending institutions are nowadays insightful on the positive aspects of *ESG* compliance and are more forthcoming to give out capital to companies that rate higher *ESG* ratings than others, as the risk of such companies defaulting on their borrowed debts diminishes (Deloitte, 2021).

Given this new lending institutions' take on *ESG*, other maritime stakeholders, which include private investors and shareholders, now share a common belief that shipping companies ranking a higher *ESG* rating have easier access to a bank's debt financing, which has positively changed their perception towards such organisations, as investing in them would provide for sounder returns and dividends. This therefore drives a positive and mutual relationship amongst both banks and other lenders.

Whilst the concept of ESG is to date voluntary in nature, this is eventually turning compulsory for some of the businesses within the EU zone at the turn of year 2024 and therefore, one should understand the perceptions of all maritime stakeholders in light of the addition of this new EU requirement. Nevertheless, although the shipping industry is subject to strict regulations imposed by the *International Maritime Organization (IMO)* and the *International Labour Organisation (ILO)*, both falling under the remit of the United Nations' jurisdiction, adhering to ESG standards might be relatively more straightforward, despite the supplementary reporting obligations associated with this framework. (Wang, 2020).

1.4 RESEARCH AIMS AND OBJECTIVES

This research shall endeavour to investigate the significance of ESG factors in the maritime industry and stakeholders' perceptions on the implications, challenges, and opportunities associated with achieving or maintaining ESG compliance. While ESG considerations have gained prominence in the investment community as a means to evaluate a company's sustainability and responsible practices, this study recognizes that the implications of a strong ESG ranking extends beyond investors. It seeks to

understand the perceptions of various maritime stakeholders, including ship managers, maritime lawyers, flag states, classification societies, P&I Clubs, and marine surveyors alike, regarding ESG in the shipping sector. Additionally, an essential component of this research involves understanding the evolving landscape of ESG regulations, particularly within the context of EU jurisdictions, where the concept is progressively becoming compulsory for certain companies. By exploring these dimensions, the study aims to provide a comprehensive overview of how ESG factors are perceived, embraced, and navigated by key stakeholders within the maritime domain.

Therefore, with the above aims in mind, the following objectives are to be investigated further in this research:

1. Assessing the perceptions, awareness, understanding, and importance of ESG principles among maritime stakeholders in the industry;
2. Investigate demographic influences on the concept of ESG, its opportunities and challenges as seen through the eyes of stakeholders.

1.4.1 ADDRESSING POTENTIAL RESEARCH BIAS

This research will explore the perception of ESG factors among stakeholders in the maritime industry. As a practicing researcher in this field, it is essential for the writer to establish transparency and address any potential concerns regarding bias or skewed analysis. This research is motivated purely by the writer's sincere passion for this industry and a genuine desire to comprehend the implications of future ESG reporting requirements on this sector.

The writer's affinity towards this industry shall in no way compromise the integrity of this research. On the contrary, it will serve as a driving force to conduct a rigorous and impartial study, by aiming to approach this research with objectivity, and the findings accurately reflecting the perceptions and realities of this industry.

1.5 OVERVIEW OF RESEARCH

This research is structured to comprehensively investigate the perception of ESG amongst maritime stakeholders. This will be divided into six chapters, each focusing on crucial aspects of this study.

Chapter 2 will primarily concentrate on conducting an extensive analysis of the available literature on ESG, both generally and within the maritime sector. This analysis will encompass both white papers and grey papers, aimed at establishing a comprehensive understanding of ESG.

After a comprehensive review of the available literature, Chapter 3 will explore the methodologies applied for this research This will provide a detailed account of how the Likert Survey was conducted with stakeholders in the maritime field. Moreover, this chapter will additionally tackle potential constraints and ethical aspects linked to the study. To identify appropriate literature and the gaps that this research aims to address, a PRISMA Analysis will also be undertaken. This chapter shall also include a research flow chart that ensures replicability of the study.

Chapter 4 will present and analyse the results obtained through the Likert surveys conducted with maritime stakeholders. Statistical analysis will be employed to facilitate a thorough interpretation of the findings, enhancing the credibility of the results.

Chapter 5 will involve an in-depth analysis of the outcomes obtained from the Likert surveys. These findings will be compared to the initial research objectives to assess their alignment.

Chapter 6 will provide a summary of the study's outcomes and conclusions, address inherent limitations, and explore potential avenues for further research.

1.6 CHAPTER 1 – CONCLUSION

A concise introduction to the ESG concept was presented, portraying the research's aims and objectives. Furthermore, potential research bias was discussed, and a synopsis of the research's structure and flow was provided.

2. LITERATURE REVIEW

2.1 CHAPTER 2 – INTRODUCTION

This chapter concentrates on ESG from a general perspective. The discussion encompasses the historical background of ESG and its evolution into the contemporary concept as we know it today. Furthermore, the EU's new reporting requirements are outlined. Subsequently, the literature review delves into the shipping industry's awareness of this concept, including challenges and opportunities for ship owners. The gaps identified in this literature review will ultimately lead to the formulation of research objectives that will be explored further in this study.

2.2 ESG

ESG represents key factors that businesses utilize to showcase their sustainability and ethical decision-making practices to both investors and shareholders. (Kiehne, June 2019). These three parameters specifically target shareholder and investor concerns relating to;

- *Environmental* issues such deforestation, waste management, pollution and climate change;
- *Social* injustices which manifest itself in labour malpractices, unethical business conduct, human rights issues and health & safety concerns;
- *Governance* concerns such as lack of risk management practices, inadequate stakeholder engagement, questionable ethical behaviour, and the ineffectiveness of a board composition and structure.

Whilst all the above concerns are not exhaustive, share insight on some of the most crucial topics, that shareholders and other interested stakeholders seek to comprehend, prior to committing to any investments within a business. At present, companies are not obliged to report their ESG efforts towards sustainable practices. However, both new EU regulations, and the growing international outcry linked to sustainability, have influenced the financial markets, increased competitive forces, and therefore placing pressure to include ESG in their day-to-day operations. This has embedded ESG within large organisations' cultures requiring specialised skill sets and proper allocation of resources to operate differently, efficiently and to investors' expectations (Perez, August, 2022).

Nevertheless, there are always two sides to a coin. Businesses may perceive ESG as both an unappealing and impractical obligation, while others derive comfort from the notion that adhering to ESG standards and achieving satisfactory ratings can foster business growth and lead to improvements in other key performance indicators over time. (Perez, August, 2022). This study shall explore the impact of ESG practices within the maritime sector, concurrently gaining valuable insights into stakeholders' viewpoints on the opportunities and challenges confronted by companies within this industry.

2.2 THE ORIGIN OF ESG

The concept of ESG factors does not have a distinct founding date, but rather it has evolved gradually over time through various influential factors, such as social responsibility, prudent investment practices, and the introduction of sustainability goals by organizations like the United Nations (UN) and other legislative bodies. These developments have culminated in the formulation of ESG as it is recognized today.

Lykkesfeldt et al., described the evolution of ESG in eight phases, and is being presented in chronological order, below (Lykkesfeldt, 2022).

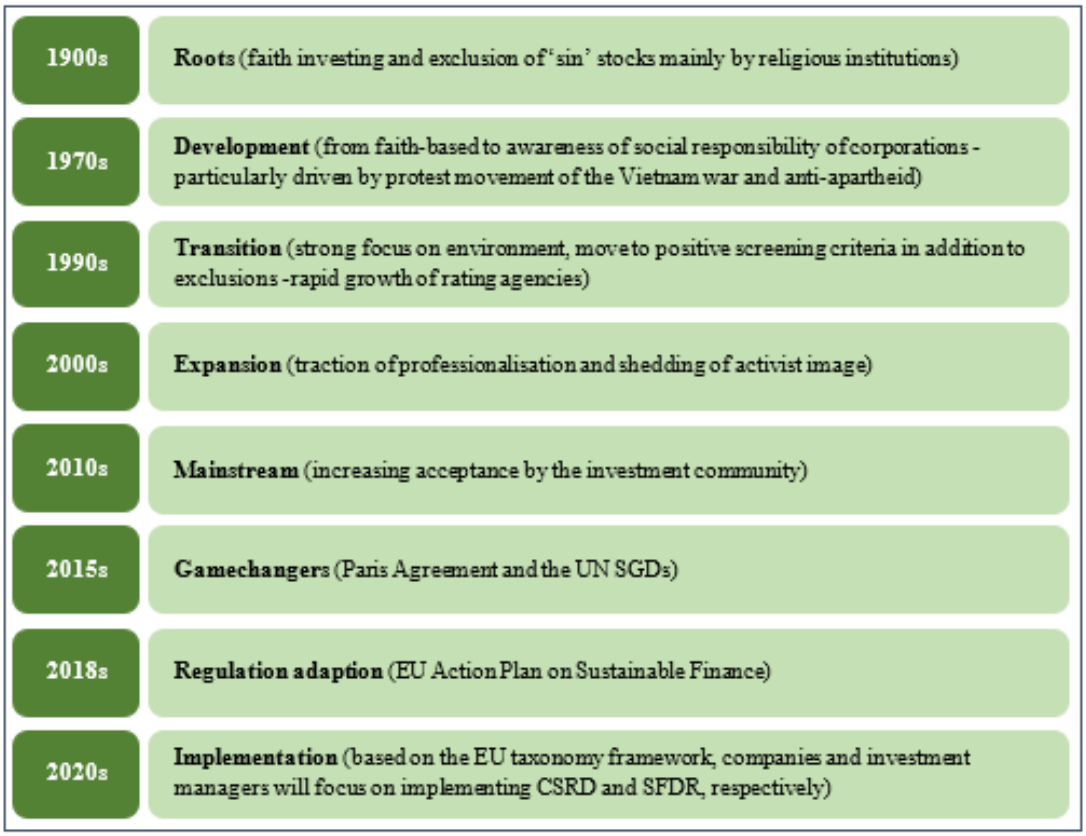

Figure 1 The Development of ESG over Time. Adapted from (Lykkesfeldt, 2022)

2.2.1 ESG in the 1900's

From Figure 1 it is evident that the concept of ESG is in fact a natural development process that started off with five phases namely *Roots*, *Development*, *Transition*, *Expansion* and *Mainstream* as described by C. Loche et al., (Loche, 2012), followed by an additional two phases, extended by L. McTavish et al., (McTavish, 2020), which includes *Gamechangers* and *Regulation Adaptation.* Therefore, ESG does not have a single founding date, but has in fact evolved over time when investors and organisations understood the essential nature of the three sustainability pillars in their decision-making processes.

In the 1960's and 1970's *Socially Responsible Investing* (SRI) was on the rise, where investors had already begun considering social and environmental factors when investing in new companies, products, and services. This eventually progressed to companies realising the importance of maintaining a good relationship with its investors and shareholders through *Corporate Social Responsibility* (CSR) (Olmedo, 2013).

During the late 1990s and early 2000s, the *United Nations Environment Programme* (UNEP) in collaboration with the *Coalition for Environmentally Responsible Economies* (CERES) created a framework enabling organizations to transparently report their sustainability initiatives and their effects on the community to shareholders. This initiative facilitated a robust system for companies to assess, handle, and disclose their sustainability performance (GRI, 2023). The first mention of ESG appeared in 2006 by the *United Nations Principles for Responsible Investments* (Jeongmin, 2023).

2.2.2 ESG in the 21st Century

Year 2015 marked a significant milestone and had a profound impact on shaping ESG as it exists today. During this time, the UN made two pivotal moves: adopting the *Paris Agreement* as a treaty and formulating a set of seventeen interconnected *Sustainability Development Goals* (SDG). These SDGs offer a comprehensive framework for international communities to promote sustainable development and work towards achieving these goals by 2030.

On the 12th of December 2015, the *Paris Agreement* reached 196 signatory countries at the UN Climate Change Conference (COP21). This landmark and legally binding

agreement placed climate change responsibility on the International Community and Governments. (Esty, 2020). This Treaty is set to hold "*the increase in the global average temperature to well below 2 °C above pre-industrial levels*" and to make every effort "*to limit the temperature increase to 1.5 °C above pre-industrial levels*" (Change, 2016). Ongoing efforts by signatory countries includes zero carbon emissions by 2030 (Change, 2016).

In the same year as the Paris Treaty, the UN formally announced seventeen (17) Sustainable Development Goals (SDG) comprising of 169 targets and 230 indicators. Table 1 presents the 17 SDG Goals, and what could be done by the global community to achieve each objective (UN, 2023).

Table 1 The 17 UN SDG together with why they have been introduced and what is expected from the global community (adapted and referenced from (UN, 2023) .

SDG GOAL No.	SDG GOAL	WHY HAS THIS GOAL BEEN INTRODUCED?	WHAT IS EXPECTED FROM THE COMMUNITY
1.	**No Poverty**	More than 700 people still live in extreme poverty.	Donate What you Don't Use.
2.	**Zero Hunger**	A third of the world's food is wasted, yet 821 million people are undernourished.	Waste less food and support local farmers.
3.	**Good Health and Well-Being**	Vaccinations resulted in an 80% drop in measles deaths between 2000 and 2017.	Vaccinate Your Family.
4.	**Quality Education**	617 million children and adolescents lack minimum proficiency in reading and mathematics.	Help Educate the Children in your Community.
5.	**Gender Equality**	1 in 3 women has experienced physical and/or sexual violence.	Empower Women and Girls and Ensure their Equal Rights.
6.	**Clean Water Sanitation**	Water scarcity affects more than 40$ of the world's population.	Avoid Wasting Water.
7.	**Affordable and Clean Energy**	Three billion people still lack clean cooking fuels and technologies.	Use Only Energy-Efficient Appliances and Light Bulbs.
8.	**Decent Work and Economic Growth**	One-fifth of young people are not in education, employment, or training.	Create Job Opportunities for Youth.
9.	**Industry, Innovation, and Infrastructure**	Roads, water, sanitation, and electricity remain scarce in many developing countries.	Fund projects that provide basic infrastructure.
10.	**Reduced Inequalities**	The poorest 40% of the population earn less than 25% of global income.	Support the marginalized and disadvantaged.
11.	**Sustainable Cities and Communities**	9 out of 10 urban residents breathe polluted air.	Bike, walk or use public transportation.
12.	**Responsible Consumption and Production**	By 2050, the equivalent of almost three planets could be required to sustain current lifestyles.	Recycle Paper, Plastic, Glass and Aluminium.
13.	**Climate Action**	Global emissions of carbon dioxide have increased by almost 50% since 1990.	Act now to stop global warming,
14.	**Life Below Water**	Over three billion people depend on marine and coastal biodiversity for their livelihoods.	Avoid plastic bags to keep the oceans clean.
15.	**Life on Land**	Forests are home to more than 80% of all terrestrial species of animals, plants and insects.	Plant a tree and help protect the environment.
16.	**Peace, Justice and Strong Institutions**	In 2018, the number of people fleeing war, persecution and conflict exceeded 70 million,	Stand up for human rights.
17.	**Partnerships for the Goals.**	Achieving the SDGs could open up US$12 trillion of market opportunities and create 380 million new jobs by 2030.	Lobby your government to boost development financing.

Additionally, in 2021, H. Skaug et al, also categorized the UN's 17 SDG's into the three ESG pillars, tabulated below (Skaug, July 2021);

Table 2 the 17 SDGs categorised in the three ESG pillars adapted from (Skaug, July 2021).

Environmental	Social	Governance
SDG 6 Clean Water and Sanitation	SDG 1 No Poverty	SDG 5 Gender Equality
SDG 7 Affordable and Clean Energy	SDG 2 Zero Hunger	SDG 8 Decent Work and Economic Growth
SDG 9 Industry, Innovation, and Infrastructure	SDG 3 Good Health and Well-Being	SDG 9 Industry, Innovation, and Infrastructure
SDG 11 Sustainable Cities and Communities	SDG 4 Quality Education	SDG 11 Sustainable Cities and Communities
SDG 12 Responsible Consumption and Production	SDG 5 Gender Equality	SDG 12 Responsible Consumption and Production
SDG 13 Climate Action	SDG 6 Clean Water and Sanitation	SDG 13 Climate Action
SDG 14 Life Below Water	SDG 8 Decent Work and Economic Growth	SDG 16 Place, Justice, and Strong Institutions
SDG 15 Life on Land	SDG 9 Industry, Innovation, and Infrastructure	SDG 17 Partnerships for the Goals
	SDG 10 Reduced Inequalities	
	SDG 12 Responsible Consumption and Production	
	SDG 16 Place, Justice, and Strong Institutions	

In 2018, the EU also understood the importance of sustainability. Not just from a humanitarian perspective, but also form a financial standpoint. In fact, an action plan was drawn up that would promote sustainable practices within the European Financial Sector, thus actively contributing to achieving the UN SDG goals and the objectives of the Paris Treaty. This includes establishing an EU taxonomy, strengthening transparency and disclosure of climate-related information by the EU markets, and enhancing corporate governance. This plan, now known as ESG, was designed with the purpose of fostering accountability, sustainability, and transparency in companies' actions and practices amongst the three pillars. Its objective is to drive the essential changes needed to adopt and attain the globally established SDGs. Consequently, transparency has garnered significant attention from investors and shareholders, providing insights into whether a company is fundamentally aware and considerate of its stakeholders, a sentiment that can extend to how the company interacts with these very investors and shareholders. (Pielichata, 2019).

Whilst it is not the intention of this research to thoroughly delve into ESG's passage over time, it is noticeable that Sustainable investing has grown and evolved significantly over the past century, demonstrating increased maturity amongst business stakeholders, especially in extraordinary settings such as financial crises or a spread of a virus on a global scale, where a ketchup effect was demonstrated by investors who were overly concerned on the social justice, environmental impact and economic marginalization.

2.3 EU'S ESG REPORTING REQUIREMENTS

In 2023, the Corporate Sustainability Reporting Directive (CSRD), an EU Regulation, came into force, which would enhance ESG transparency within EU companies, and other non-EU businesses that have commercial interests within the European Union. This initiative created new and detailed sustainability reporting requirements, together with the reporting standards to be used (as issued by the *European Sustainability Reporting Standards* (ESRS)). ESRS reporting shall enter into force as from the 2024 financial year, with the first reports expected to be published by 2025. This reporting requirement shall eventually apply to nearly 50,000 companies within the EU. and is being denoted by shareholders, as ESG 2.0 (Commission, 2023).

Listed companies trading in the EU regulated market, that satisfy two out of the following three criteria;

1. €40 million net turn over;
2. Assets recorded in balance sheets surpass €20 million;
3. Employing more than 250 employees during the given financial year.

shall be required to report on matters linked to ESG sustainability (Spirito, 2023). The scope for companies that should comply to ESG reporting are being presented below, according to the articles as set out in the CSRD.

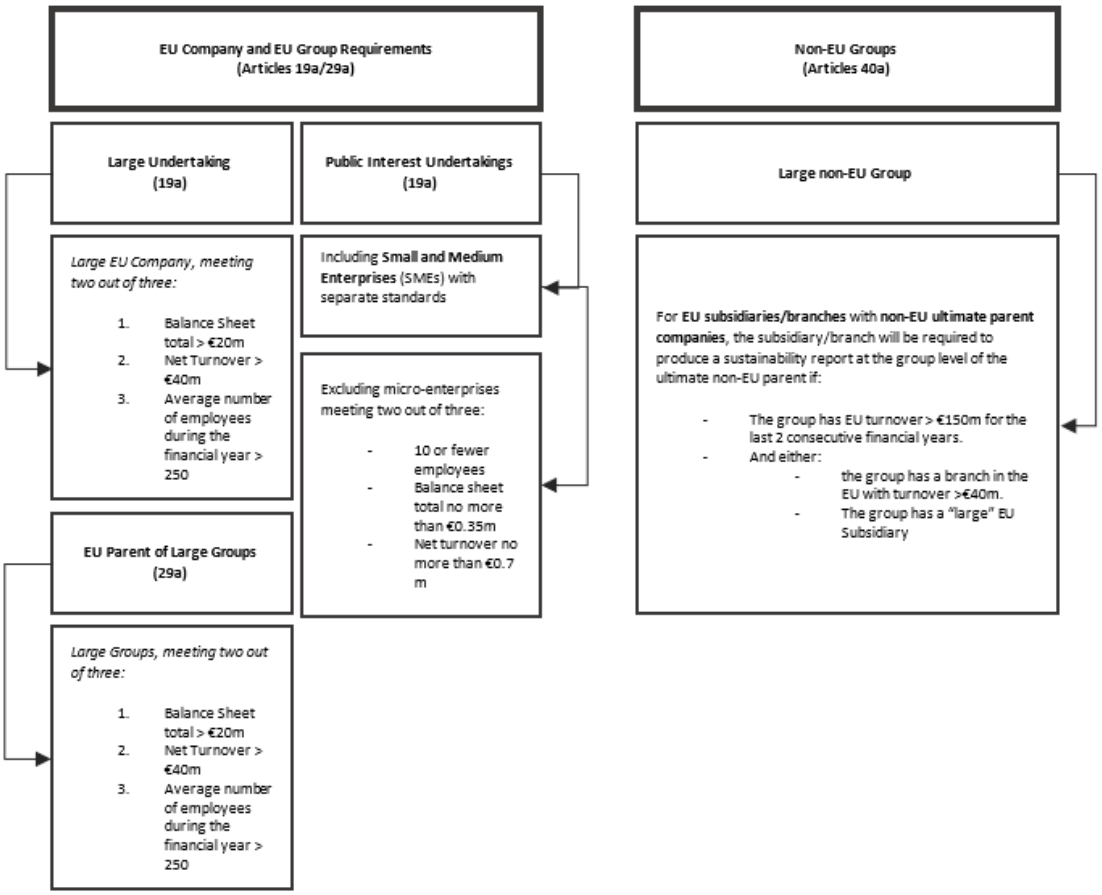

Figure 2 Scope of Companies to Report ESG Compliance according to ESRS adapted from (Watkins, 27 January 2023).

Companies have various standard options when it comes to reporting their ESG sustainability efforts. The *Global Reporting Initiative* (GRI) is considered the most utilized standard. Moreover, the *Sustainability Accounting Standards Board* (SASB) has also gained prominence, followed by the *European Sustainability Reporting Standard* (ESRS) which is also a leading framework for ESG reporting, particularly due to its mandatory requirement for companies established or operating within the EU zone in the coming years. (Solberg, February 2020).

2.3.1 European Sustainability Reporting Standards (ESRS)

The ESRS represent guidelines set forth by the *European Financial Reporting Advisory Group* (EFRAG), which serves as the EU Commission's technical advisory board. These guidelines outline specific information that companies must report on, aligning with the CSRD reporting requirements. The development and implementation of these ESRS will take place over the coming years (Watkins, 27 January 2023).

The CSRD on the other hand, provides a framework for the ESRS and includes certain conditions that the Commission must consider when creating and adopting them, such as incorporating guidance issued by the *International Sustainability Standards Board* (ISSB). Multiple ESRS standards have been proposed, with the first set expected to be finalized by June 30, 2023. (Watkins, 27 January 2023).

2.3.2 CSRD/ESRS Implementation Timeline

As identified in Figure 2 different articles as set out in the CSRD shall be obliged to comply to this Directive in different time frames, added below for ease of reference.

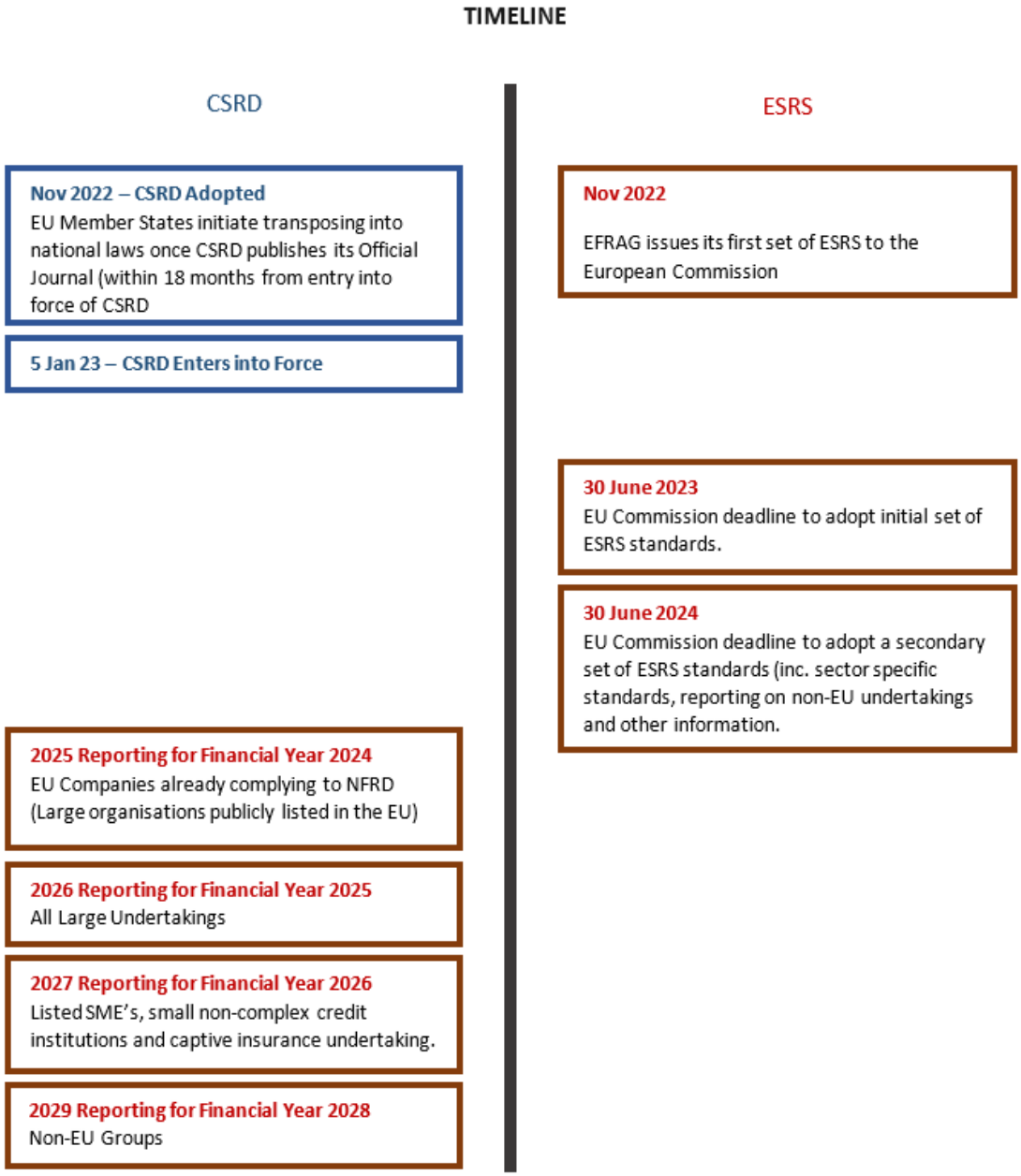

Figure 3 Implementation Timeline (Watkins, 27 January 2023)

2.4 ESG IN THE SHIPPING SECTOR

The shipping industry is a heavily regulated sector, with a strong focus on its environmental impact and the safety of both seafarers and the general public. According to the latest figures as referenced from the *United Nations Conference on Trade and Development* (UNCTAD), the shipping industry accounts to the carriage of approximately 90% of the World Trade, with a fleet that grew by 63 million deadweight, in a single year between 2021 and 2022.

In total, the global fleet consists of 2,199 million deadweight of ships, which in tangible terms equates to an approximation of 103,000 vessels. 94% of shipbuilding, in 2021, was carried out in Asia, particularly in China, Republic of Korea and Japan (UNCTAD, 2022) and just over 45% of the World's fleet were registered in three jurisdictions (referred to as Flag Administrations within the industry), namely Panama, Liberia, Marshall Islands and Malta.

The ESG concept within the shipping industry is not new. The sector is governed by International Codes, Conventions and Principles which have been ratified, after resolutions were voted for at the IMO, the UN's maritime branch. In the below table, the Codes, Conventions, and International Legislation have been categorised according to the ESG pillars, for ease of reference;

Figure 4 International Conventions and Codes Pertaining to the Environment (Organisation, 2019)

Figure 5 International Conventions and Codes pertaining to the Social Element (Organisation, 2019)

Figure 6 International Conventions and Codes pertaining to the Governance Element (Gritsenko, 2015)

The above lists clearly demonstrate the industry's commitment to safeguarding the environment and the well-being of employees and the public, together with ensuring proper governance, by implementing mandatory rules, regulations, and Conventions.

2.4.1 'E' in Maritime ESG

The recent developments from the 80th session of the *International Maritime Organization's Marine Environment Protection Committee* (MEPC) in July 2023 highlights the importance of the environmental component within the ESG concept. During this session, notable changes were made to Greenhouse Gas (GHG) emissions requirements, targeting a 20% reduction by 2030 and a 70% reduction by 2040 in comparison to 2008 levels. The ultimate goal is that of carbon-neutral shipping by 2050, highlighting the growing relevance of environmental sustainability in the maritime industry and its alignment with the broader ESG framework.

As can be denoted from Figure 4, the International Maritime Organisation (IMO) has several Conventions and Codes that imposes requirements onto ship owners and managers such as the use of low sulphur fuel oils, the installation of Ballast Water Treatment plants to process ballasted and de-ballasted water, the installation of scrubbers to reduce the carbon footprint, and the promotion of new and efficient propulsion systems such as hydrogen ready ships. The IMO promotes environmental sustainability through the Poseidon Principles. (Lee, March 2023).

Established in 2019, the Poseidon Principles result from collaboration among stakeholders like international shipping banks, classification societies, and key industry players. These principles focus on four aspects: *Assessment, Accountability, Enforcement, and Transparency,* all aimed at decarbonizing the maritime sector. Their primary objective is to provide a framework for reducing carbon emissions and promoting sustainability in the maritime industry. Most shipping banks adhering to the Poseidon

Principles are situated in Scandinavian and Central European nations, followed by Japan and the U.S (Deloitte, 2021).

POSEIDON PRINCIPLES	
Principle of Assessment	Shipowners of co-signatories' jurisdictions will be required to measure the CO_2 emissions and consequentially monitoring compliance to the global targets set such as the 80th MEPC Session
Principle of Accountability	Banks expect shipping clients to set and implement strategies that align with the IMO's greenhouse gas reduction targets and national and regional regulations. This principle emphasizes collaboration between financial institutions and their clients to drive sustainable practices.
Principle of Enforcement	Banks utilize contractual mechanisms, such as loan covenants, to ensure that clients meet the environmental standards outlined in the Poseidon Principles. This principle establishes consequences for non-compliance and reinforces the commitment to sustainability.
Principle of Transparency	Financial institutions commit to transparently disclosing their carbon emissions from ship financing activities. This principle promotes openness and accountability, enabling stakeholders to monitor progress and make informed decisions.

Figure 7 The Four Poseidon Principles

2.4.2 'S' in Maritime ESG

The social component is vital to the maritime industry, where 90% of worldwide trade (Development, 2022) occurs through maritime transportation. The workforce onboard ships, consisting of international seafarers, some working up to eleven (11) months at a time (ILO, 2006), are indispensable for the smooth functioning of the vessels and their machinery, on a daily basis.

The social dimension of seafarers within the Environmental, Social, and Governance (ESG) framework is often disregarded by numerous individuals in the maritime sector. Over the years, there have been distressing instances of neglect, through unpaid wages, suicides, and unfortunate incidents where bodies of deceased seafarers were not permitted to be disembarked from ships amid the COVID-19 pandemic. Therefore, it is deemed that challenges faced by seafarers are not solely caused by maritime stakeholders but rather by the international community at large (Guddal, 2022).

While avoiding broad generalizations, it's recognized that most shipowners uphold their responsibility to provide satisfactory working conditions for seafarers. These conditions align with minimum requirements set by codes like the MLC, safeguarding seafarers' rights related to wages, rest and shore leave. The International Transport Worker's Federation (ITF) has bolstered seafarers' rights, enabling actions like vessel arrests for crew abandonment until wages are settled and repatriation is ensured.

The OCIMF, governing oil and chemical tankers chartered to majors like Shell and BP, enforces specific crew requirements. These rules aim to maintain crew levels and prevent easy replacements by ship managers for lower wages.

A notable social gap persists, particularly in the involvement of women as seafarers and in higher management roles. Addressing this aspect remains a significant yet overlooked challenge.

In the Social aspect, Lloyd's Register, an *International Association of Classification Societies* (IACS) member, described four ways of measuring this pillar, which includes (Register, 2022);

1. Number of Accidents reported on board;
2. Number of Human Casualties during Voyages;
3. Number of findings related to inadequate procedures in ports;
4. Loss Time Incident Rate.

2.4.3 'G' in Maritime ESG

Within the ESG framework, governance also plays a crucial role as a key factor. Engaging in acts of bribery and corruption can result in severe consequences, including potential business losses and legal prosecution under internationally recognized laws and regulations such as the US FCPA and UK Bribery Act. To mitigate these risks, it is imperative for companies to establish strong ethical systems and procedures that discourage employees from engaging in illicit business practices.

Due to the global scope of the industry, determining an appropriate level of public disclosure that satisfies all stakeholders can be a complex task. Nonetheless, it is advisable for the company's report to articulate how its governance framework upholds compliance with legal obligations, potential sanctions, and industry norms. Furthermore, the report

should outline the measures taken by the company to ensure accountability and transparency in its operational activities, which is in no way an easy objective to achieve (Solberg, February 2020).

2.4.4 Analysis of ESG Reporting by Shipping Sector

A report issued by Deloitte concerning ESG reporting, explains that disclosure of data by shipping companies, in relation to the environmental aspects of ESG, is on the rise, with an increasing trend being reported yearly (Deloitte, 2021).

An examination of thirty-eight (38) shipping companies, selected randomly from the primary sub-sectors of the industry, reveals a notable presence of companies that have made commitments to prepare and produce annual sustainability reports. 63% or 24 companies out of the 38 have published at least, one ESG sustainability report. Six (6) out of the aforementioned twenty-four (24) companies are Greek owning companies. This sample also represents forty-three (43%) from the fourteen (14) Greek shipping companies surveyed in this study (Deloitte, 2021).

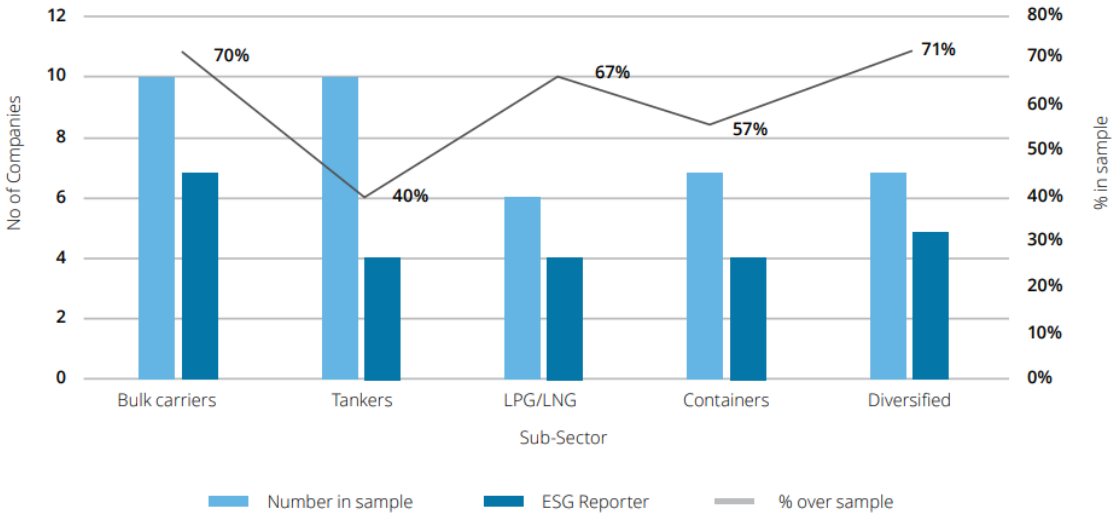

Figure 8 ESG Reporting according to Shipping Sector/ Category adapted from (Deloitte, 2021)

Based on the graphical representation provided in the preceding figure, the analysis demonstrates that among the examined sectors, namely bulk carriers, tankers, LPG/LNG, containers, and other miscellaneous shipping, the highest proportion of ESG sustainability performance reporting is observed among bulk carrier owning companies. Following closely in second place are the miscellaneous companies, while tankers, LPG/LNG, and container owning companies rank equally in the last position in terms of reporting their ESG sustainability performance. Studies on the Bulk Carrier industry have shown that due to the limited investors available for this particular industry, together with narrow margins that this sector generates, has driven the dry bulk sector to become more sustainably focused, and thus implementing strategies such as ESG (Pangalos, January 2023).

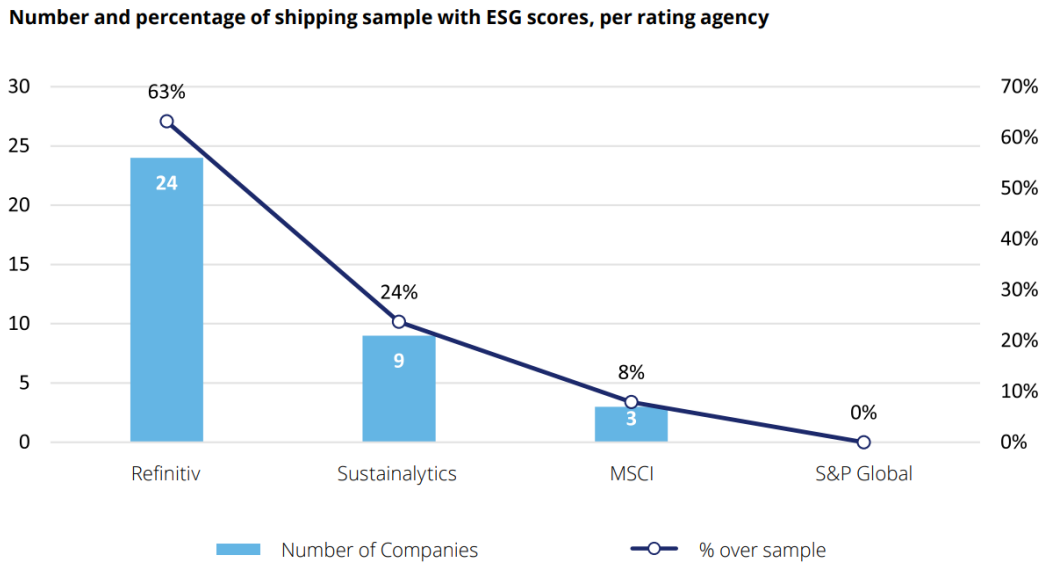

Figure 9 Percentage Ship Owning Companies (from Sample investigated) compared with the rating agencies utilised (Deloitte, 2021)

2.4.5 ESG Challenges Faced by Maritime Stakeholders

After reviewing literature on ESG in the maritime sector, along with other general ESG studies, it's evident that the challenges faced by the shipping industry resemble those of industries striving to lead in sustainability among peers. These challenges include climate change, decarbonization, financing, investment, regulations, compliance, transparency, data, talent shortages, and standardization. The upcoming sections will examine these challenges as they appear in the literature, investigating how the shipping sector tackles ESG compliance hurdles.

2.4.5.1 Climate Change and Decarbonization Challenges

The maritime sector faces a dual challenge in addressing climate change: reducing its impact on global warming and adapting to its effects. Yet, its heavy reliance on fossil fuels poses major obstacles. The transboundary nature of international shipping, limited alternative fuels, high retrofitting costs for electrified systems, and uncertain regulations all complicate decarbonization efforts. (Fisk, 2022).

2.4.5.2 Financing and Investment Challenges

The shipping industry requires substantial financing to support its transition towards sustainability. However, banks have been pulling back from the sector, leading to a decline in ship financing. The aftermath of the global financial crisis saw several major shipping lenders, such as *HSH Nordbank* and *Nord LB,* dealing with significant losses and reducing their shipping loan exposures. This has created a gap in funding sources. Alternative finance firms have emerged as a potential solution, but they often prioritize

sustainability concerns over financial returns. This shift in funding dynamics poses challenges for shipping companies in accessing the necessary capital for sustainable initiatives (Damyanova, 2020). Navigating these financing and investment challenges requires exploring new funding models and engaging with alternative finance providers.

2.4.5.3 Regulatory and Compliance Challenges

The implementation of sustainable shipping practices faces various regulatory and compliance challenges. Shipping companies often contend with limited resources for measurement systems, a lack of strategic vision for sustainability, high regulatory standards, and a reluctance to invest in CSR initiatives. Uncertainty surrounding fuel prices, regulatory effectiveness, and technological solutions further complicate the adoption of sustainable practices. Additionally, enforcing emission control regulations presents difficulties related to fuel testing, reliability of bunker fuel delivery notes, and the availability of emission testing equipment (Yusheng, 2023). Overcoming these challenges requires proactive engagement with regulatory bodies, investment in sustainable technologies, and the development of comprehensive CSR strategies.

2.4.5.4 Transparency and Data Challenges

Transparency and data-related challenges hinder progress in sustainable shipping. Historically, the industry has been resistant to sharing information due to competitive concerns, limiting transparency (Stephens, 2021). The lack of standardized definitions, standards, and metrics for ESG reporting creates inconsistency and makes it difficult to compare and assess sustainability performance. There is a risk of greenwashing, where companies may misrepresent their sustainability efforts. Short-term profit focus

sometimes takes precedence over long-term sustainability strategies, hindering meaningful progress. Overcoming these challenges requires greater transparency, consistent reporting frameworks, and accurate data to inform decision-making (Dolan, 2021). Establishing industry-wide standards, adopting robust reporting mechanisms, and leveraging advanced technologies for data collection and analysis can help overcome these hurdles.

2.4.5.5 Unprecedented Challenges Specific to the Maritime Sector

The maritime sector faces unprecedented ESG challenges affecting shipping companies' logistics and operations. Port congestion, exacerbated by force majeure situations such as the COVID-19 pandemic and incidents such as the grounding of MV EVER GIVEN in the Suez Canal, disrupts trade. Larger container ships offer scale and fuel efficiency benefits but lead to navigation problems, accidents, and port inefficiencies. These challenges impact ESG efforts by hindering goods movement, increasing emissions, and affecting sustainability goals. Dependence on larger vessels can reduce service quality and stability, posing environmental and operational risks that require resolution for sustainable shipping practices. (Vediakova, 2022).

2.4.5.6 Standardization and Accountability Challenges

Standardization and accountability pose significant challenges for sustainable shipping. Lack of standardized ESG reporting frameworks complicates assessment and comparison of sustainability performance. Holding business leaders and companies accountable becomes challenging as CEOs and boards change over time, and so do business strategies. Inconsistencies and discrepancies in ESG ratings and standards complicate matters

further. It is essential to establish robust frameworks, accurate reporting mechanisms, and clearer accountability to drive sustainable practices and enhance transparency (Marwitz, 2022). Collaborating with industry associations, engaging in dialogue with stakeholders, and actively participating in the development of standardized ESG frameworks can help address these challenges.

2.4.6 Existing ESG Opportunities

Literature has also provided several opportunities which shall be discussed and evaluated further in the following section.

2.4.6.1 Green Financing

The maritime industry is characterized by restricted cash flow, and unfortunately, it experiences inconsistent revenue that fluctuates in response to factors such as oil prices and shipping freight rates. Therefore, one can say that the market exhibits significant volatility, rendering it particularly challenging for financial institutions. Given the instability of revenue flows, financiers exercise caution when considering investments in this industry. Moreover, retrofitting existing ships poses an additional challenge, as it is met with reluctance from banks and investors who have already allocated funds towards vessels which had an assumed lifespan of 25 years (Ring, 2022).

Ship owners are now being faced by investors who expect sustainability key performance indicators when bonds are issued for their consideration. This links investments to sustainability which is called green shipping within the industry (DNV, 2023). Therefore,

ship owners that commit to improved sustainability, will be in a better position than other competitors when it comes to obtaining funds from investors.

2.4.6.2 Functional and Emotional Benefits:

According to literature, the maritime industry enjoys sustainability benefits categorised into two, namely Functional and Emotional Benefits. In the functional element, shipping companies may promote their brand position amongst competitors, improves productivity levels, optimize investment & capital expenditure and reducing costs through the reduction of energy and waste consumption. The emotional element promotes brand differentiation, improved customer engagement, enhanced employee satisfaction, and promoting sound relationships between both the owners and their respective investors and clients. (Yusheng, 2023).

Research also suggests that shipping lines that prioritize ESG consciousness, enjoy higher returns, improved customer satisfaction and enhances its market value, when compared to other companies that focus solely on maximizing their profits (Yusheng, 2023).

2.4.6.3 Support and Investment by Government Stakeholders

Numerous studies advocate that governments are providing support to Small Business Enterprises (SMEs) to encourage investment in new and innovative technology solutions. These solutions aim to enhance efficiency and safety in various segments comprising the maritime sector. The Maritime and Port Authority of Singapore may be taken as an example, where the Authority has granted $50 million worth of investment to six maritime start-up companies. This demonstrates that whilst Governments are imposing

new regulations pertaining to sustainability implementing and reporting, assistance is also accessible for companies requiring financial assistance to comply (News, 2020).

2.4.6.4 Environmental, Social and Governance Opportunities:

The importance of environmental consciousness was already being practiced by Maersk Tankers, with the development of a data analytic software, namely *ZeroNorth*. This data analytic tool aims to optimize a fleet's operations by reducing GHG emissions, whilst maximizing profits through its vessel reporting platform. This transparent approach went down well with the organisation's investors, where an additional $50 million being invested in addendum software that eventually also made its way into the markets.

This shows that investing in the right technology may be costly, but shall indirectly garner interest amongst investors, and thus improve a company's financial performance in relation to others within the same industry (Palmejar, 2022).

The safety and wellbeing of crew members is always on the forefront of legislation in the maritime sector. A report commissioned by the UK's Department for Transport in June 2022 concerning Suicide and Seafarers, focuses on the seafarer's mental health, whilst recommending the integration of mental health fitness programs throughout the industry (Carroll, 2022).

Proactive shipping companies have also invested in new virtual platforms, such as the *Care4C,* a program that monitors mental health of seafarers on a long-term basis. This

same software collaborates with several stakeholders within the maritime sector, such as welfare organisations (International Transport Worker's Federation), P&I Clubs and major ship owners, addressing issues that surround seafarers daily (Palmejar, 2022).

The nature of the maritime industry requires companies to strategically navigate around the World, amidst geopolitical tensions. Technology is critical in this process. Software such as *Windward*, enables companies to make use of artificial intelligence in a bid to understand questionable commercial activities, and other deceitful shipping practices. This promotes for sounder decisions being taken by the company's management, ensuring that any action is being carried out in line with the organisation's mission and vision. (Palmejar, 2022).

2.5 GAPS FOUND IN LITERATURE

With the introduction of the new mandatory ESG requirements, the research aims to explore the comprehensive effects of obligatory ESG reporting on various maritime stakeholders, considering both the challenges and opportunities associated with this concept. While existing literature has primarily focused on the perspective of ship owners, this study will go beyond that to investigate the viewpoints of other stakeholders. These include those with direct and indirect interests in the maritime industry, as well as those vested with the authority to advocate, regulate, and enforce ESG compliance within this sector.

Each sector within this industry faces unique challenges, opportunities, and perspectives regarding ESG. In this research, the gaps identified in the literature will be addressed through a comprehensive analysis of various aspects related to ESG principles in the maritime industry, by:

1. Assessing the perceptions, awareness, understanding, and importance of ESG principles among maritime stakeholders in the industry;
2. Investigate demographic influences on the concept of ESG, its opportunities and challenges as seen through the eyes of stakeholders.

2.6 CHAPTER 2 - CONCLUSION

This chapter delves into exploring various aspects related to ESG. It encompasses an examination of new EU legislations set to be enforced in specific segments of the EU markets, alongside an assessment of the present ESG reporting practices among ship owners and managers. Furthermore, the literature review encompasses an analysis of the challenges and opportunities faced by ship owners in the context of ESG implementation, seeking to determine whether ESG serves as a beneficial factor or, conversely, exacerbates the situation.

Through the examination of both white and grey literature, lack of research from the perspectives of maritime stakeholders on ESG becomes evident. This emphasizes the significance of understanding the viewpoints of various maritime professions within the industry. It becomes crucial to determine whether the concept of ESG carries significant importance or is simply considered an additional formality in meeting legislative obligations.

3. RESEARCH DESIGN, APPROACH & METHODOLOGY

3.1 CHAPTER 3 - INTRODUCTION

In this chapter, the focus is initially on the identified literature that has given rise to gaps requiring further analysis. The approach to addressing these gaps involves quantitative analysis, including a description of how data will be collected. The discussion will also encompass the management research philosophies, the sampling frame, and the statistical methodologies to be utilized.

A comprehensive flowchart outlining the approach to be employed in conducting this thesis is provided below. This diagram also emphasizes the potential for **replicating** this study.

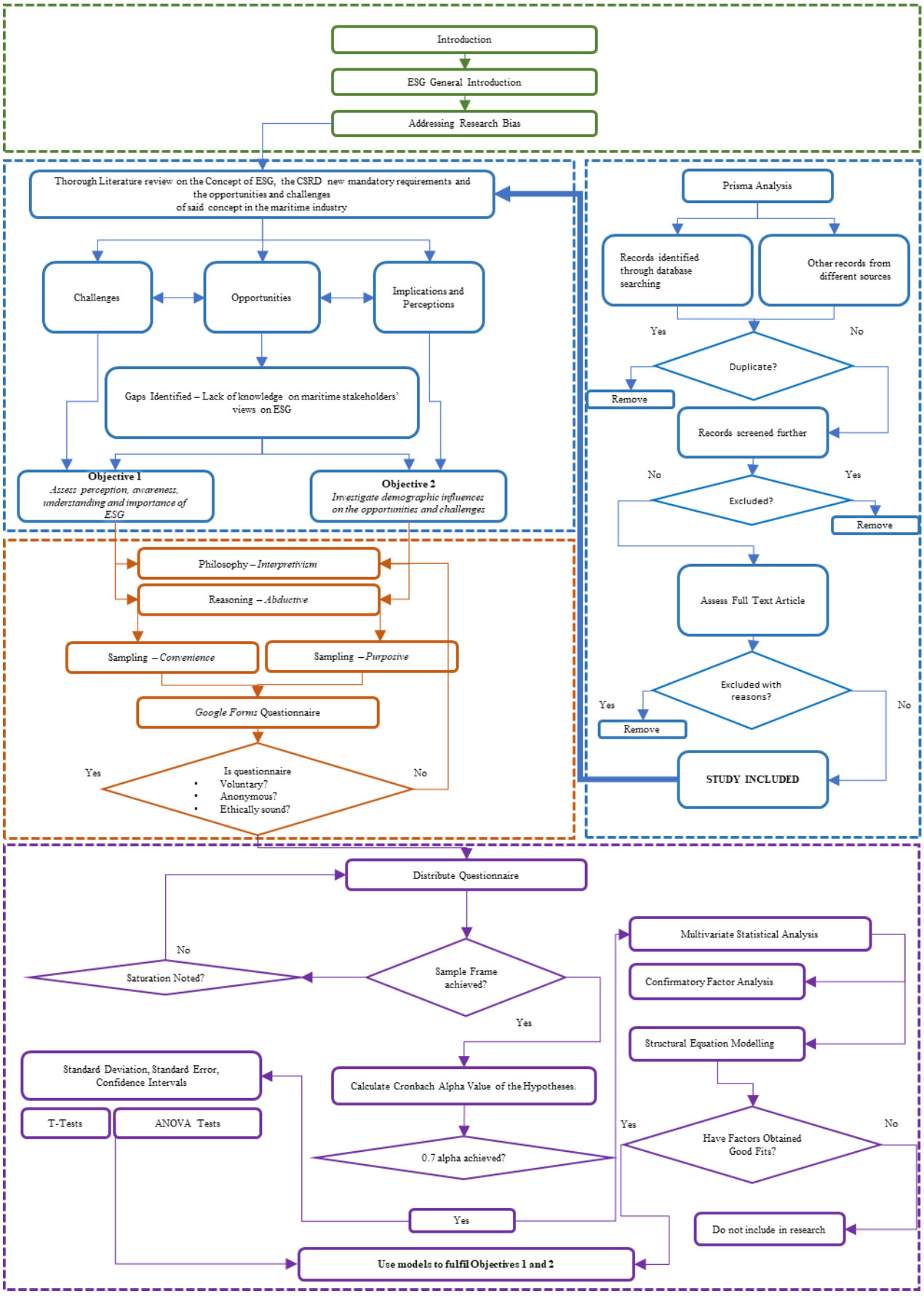

Figure 10 Research Flow Chart

3.2 PRISMA ANALYSIS – ESG IN MARITIME

This research shall be focusing on exploring the ESG aspects within the maritime industry. It is therefore essential to employ a rigorous and systematic approach to gather relevant and reliable information. To ensure the credibility and comprehensiveness of this research, the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) concept was adopted which will be represented in the following sections, to ensure that valid themes and gaps are addressed.

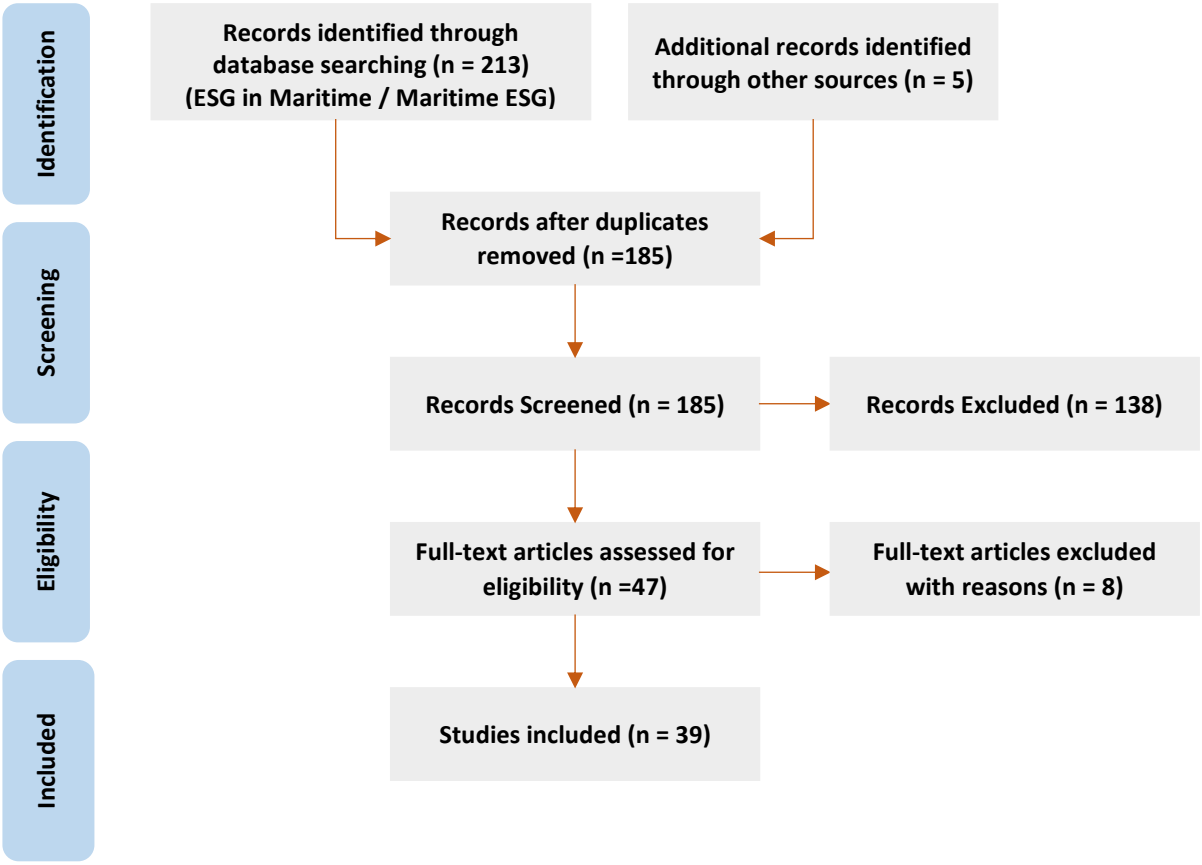

Figure 11 PRISMA Literature Analysis of ESG in Maritime

A comprehensive PRISMA analysis was conducted to identify relevant white and grey literature on the topic of ESG, specifically focusing on "*ESG in maritime*" as the targeted text. The analysis encompassed multiple sources, including the University's online journal database *Hydi*, and additional search engine results, where grey papers on the concept of ESG within the maritime segment, were also found, as seen from financiers' or ship owners' perspectives. This initial search yielded a total of 218 journals pertaining to the specified topic.

To refine the results, a screening process was implemented, resulting in the exclusion of 33 journals deemed inapplicable to the research objectives. Consequently, the number of journals was reduced 185. To further narrow down this selection, the abstracts and

conclusions of these journals were assessed to determine their relevance to our intended research, which left 47 papers to be assessed further.

To obtain a more thorough understanding of these remaining 47 papers, a full-text assessment was subsequently conducted. In this stage, an additional 8 papers were excluded due to their focus on case studies that fell outside the scope of this research. As a result, 39 journals were considered suitable for inclusion in this literature review. In the annex of this research, a list of the papers examined for this PRISMA analysis is being presented.

3.3 BUSINESS AND MANAGEMENT RESEARCH PHILOSOPHY

From an academic research standpoint, comprehending the research philosophies available to an academic is crucial, as these philosophies serve as guiding principles for selecting appropriate research methods (Saunders, 2012). These philosophies shape the researcher's assumptions about the fundamental nature of the study. Among various research philosophies, *interpretivism* has been chosen for this specific study (Saunders, 2012), seeing that it centres on understanding individuals' perspectives and their experiences and interactions within a particular industry.

Out of the three types of reasoning available, namely *deductive*, *inductive*, and *abductive*, the research will employ *abductive* reasoning for this study. *Abductive* reasoning involves formulating hypotheses to explain observed phenomena (Saunders, 2012). In this research, the primary objective is to explore maritime stakeholders' perspectives on the concept of ESG. By employing quantitative data analysis methods,

the study aims to derive the most plausible explanations for the challenges and opportunities that stakeholders associate with ESG.

3.4 SAMPLING FRAME AND RESEARCH POPULATION

In this research, a combination of sampling techniques, namely *purposive sampling* and *convenience sampling*, will be employed. The study aims to explore the perceptions of specific maritime stakeholders regarding the challenges and opportunities related to ESG in the maritime industry. The selection of participants was intentional and based on their expertise and active involvement in the industry, which is why *purposive sampling* was essential.

Convenience sampling was utilized in this research through the implementation of a Likert survey. The survey allowed participants to rank statements based on the formulated causal indicators. Participants were chosen based on their accessibility within the maritime markets, considering that the researcher forms part of this community.

From the writer's experience within the industry, the following stakeholders have been identified and tabulated below, including a description of each, who were requested to participate on a voluntary and anonymous basis in this study.

Table 3 Maritime Stakeholders Participants

Occupation	***Broader Group***	**Description**
Master Mariner/ Deck Officer / Chief Engineer / Engineer Officer	Ship Owner's Representative	Essential in the daily running of ships and are at the fore front of understanding the implications of ESG compliance. Vessels are manned according to Minimum Safety Manning Requirements as imposed by the Flag Administration of each vessel, which also provides insight as to how many crew members should be available on board for each ship. Crew normally comprises of Master Mariners, Chief Officers, other deck officers, Chief Engineers, other Engineering officers, and ratings (such as able seamen, boatswain, wipers and oilers). For this research, the top positions on board vessels where approached.
Naval Architect / Marine Engineer / Mechanical Engineer (with maritime experience / Marine Surveyor	Ship Owner's Representative	Mostly work as marine surveyors assisting all kinds of stakeholders such as ship owners, managers, P&I Clubs, Cargo Shippers, Incident Investigation Boards etc. Occasionally, they are also appointed to analyse vessel structural issues or design new builds.
Cargo / Bunker Surveyor	Ship Owner's Representative	Individuals that attend on board to verify quantities of bunkers and cargoes loaded or discharged from vessels. Some disputes also arise on quantities and quality of cargo, to which they are also appointed to investigate. The approached individuals work for large international organisations.

Occupation	***Broader Group***	**Description**
Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Each vessel identifies to a specific jurisdiction (or Flag), where the laws of each jurisdiction govern the operations on board such vessels. Each flag is signatory to many, if not all, of the International Conventions, Regulations and Codes, with additional laws being imposed specific for each jurisdiction. Officers are employed at each Flag to monitor compliance of its fleet to these international regulations. These boards are set up by each Flag Jurisdiction to analyse incidents arising on board vessels flying their respective flag. The aim of establishing such boards is to analyse onboard incidents, identify root causes, and propose recommendations to the flag such that the necessary action is taken for such similar instances to be mitigated, or better yet, eliminated.
Port Authority Personnel	Regulatory Body	Responsible for managing a jurisdiction's port and assets from safety to security. This is a Governmental department that oversees vessel tracking, monitoring and reporting.
P&I Club Representative	Ship Owner's Representative	Insurers acting on behalf of ship owners and charterers, that offer financial assistance in 3rd party liability claims;
Class Surveyor	Regulatory Body	Class Societies are non-profit organisations that are entrusted by Flag Administrations to have quality and up to standard vessels built and maintained over the subsequent years. Class Surveyors are appointed to monitor on behalf of Classification Societies.

Occupation	*Broader Group*	Description
Ship Manager	Ship Owner's Representative	Manages a shipowner's fleet to ensure that they are being properly maintained to Flag / Class Requirements. Responsible to organise dry dockings every 36 months and to monitor vessel's budgets.
Maritime Lawyers	Ship Owner's Representative	Maritime lawyers act on behalf of clients who may well be ship owners or charterers, following dispute with third parties. They may represent clients both during discussions or in a court of law.
Ship Agents	Ship Owner's Representative	Ship agents are individuals who represent ship owners, operators, or charterers and manage a wide range of logistical, administrative, and commercial tasks associated with a ship's visit or time spent in a specific port.
Pilots	Regulatory Body	Pilots offer their expertise and support to shipmasters and bridge teams when manoeuvring vessels through port entrances, exits, narrow channels, or regions with potential hazards.

Among the diverse maritime stakeholders who were contacted to participate, there exists a variation in the distribution of personnel working within different occupational roles. For instance, the number of individuals serving as class surveyors is relatively smaller and less frequent compared to the greater presence of master mariners or flag inspectors. This discrepancy might lead to a shortage of participants, thereby limiting the statistical comprehensibility of their viewpoints.

To address this limitation effectively, deliberate steps were taken to identify country managers holding key positions within each occupational group. Their prominent roles enable them to reach out to other professionals within their respective groups and encourage their participation in the survey by completing the questionnaire. This collaborative approach aims to achieve a more equitable distribution of survey participants. The necessary information about these managers was obtained through coordination with their local representatives in Malta.

In the event that the occupational groups were still not properly distributed, each group was re-categorised into two main broader occupational groups namely *Regulatory bodies* and *Ship Owner's Representatives*. These overarching terms effectively cover all the specified occupational roles.

A mathematical statistical equation was conducted to accurately determine the necessary sample size necessary for this study (n) (Sigrun, 2018);

$$n = \frac{Z^2 p(1-p)}{E^2}$$

For this study, a 95% confidence interval was chosen. Z is the score corresponding to the desired confidence level (taken as 1.96), p is the estimated proportion of the population with the characteristic of interest (taken as 0.5 for maximum variability) and E is the margin of error. The following was computed;

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{(0.05)^2}$$

$$n = 385$$

Therefore, a total of 385 participants were required for this research.

Utilizing the writer's extensive knowledge of the local maritime industry and an extensive network of contacts within the same sector, numerous participants were approached to take part in the voluntary and anonymous survey. A total of 612 maritime stakeholders were contacted to complete the Likert survey, with 120 of them responding positively and completing the questionnaire as requested, totalling just under 20% of the targeted audience. The questionnaires were sent out on the 10th of July 2023, and circulated for feedback up to the 20th of August 2023, to allow for sufficient time to statistically analyse the results.

3.5 COMPILING THE LIKERT SURVEY

Due to time constraints during questionnaire distribution to maritime stakeholders, a user-friendly program, *Google Forms*, was chosen for its compatibility with both PCs and smartphones. This decision was influenced by the summer period, possibly leading respondents to prefer smartphone-friendly surveys.

Google Forms facilitated easy compilation of Likert questionnaires. Section A introduced ESG, EU reporting requirements (CSRD), and assuring voluntary and confidential participation as the database did not allow recording of participant emails in a bid to maintain privacy.

Participants had to agree to proceed; disagreement voided the questionnaire. This ensured willing and informed participation, respecting autonomy, maintaining confidentiality for non-participants, and fostering trust.

The questionnaire also referred to the researcher's email for those wanting to understand the research conclusions, promoting engagement and knowledge sharing amongst the stakeholders.

Good day,

My name is **Paul Buhagiar**, and I am reading for an Executive Master of Business Administration at the University of Malta.

The research I am currently undertaking concerns the concept of Environmental, Social and Governance (ESG) in the maritime industry, and the obligatory reporting that a new EU Directive shall impose on over 50,000 companies within EU member states by 2025.

ESG are a set of three principles that companies adopt to promote sustainability and responsible practices within their organisation. These initiatives address;

1. **Environmental** issues (such as Greenhouse Gas Emissions),
2. **Social** responsibility (providing a safe working environment for employees), and
3. **Governance** (through transparency and accountability of how business is carried out).

These three pillars create a positive long-term relationship between an organisation and its clients, suppliers, and the general public. A company ranking poor ESG scores may suffer financial repercussions through loss of interested investors who are encouraged to invest in other companies that promote sustainable business practices and have higher ESG scores.

This research, which takes about 10 minutes of your valuable time, shall look into the opportunities and challenges presented by ESG, from a maritime stakeholder's perspective.

I sincerely thank you for voluntarily taking part in this survey, replies of which shall remain strictly anonymous, as no personal data shall be recorded.

Regards,

Paul Buhagiar

paul.buhagiar.08@um.edu.mt

(Research Student)

Prof. Simon Grima

simon.grima@um.edu.mt

(Research Tutor)

Figure 12 Questionnaire Introduction

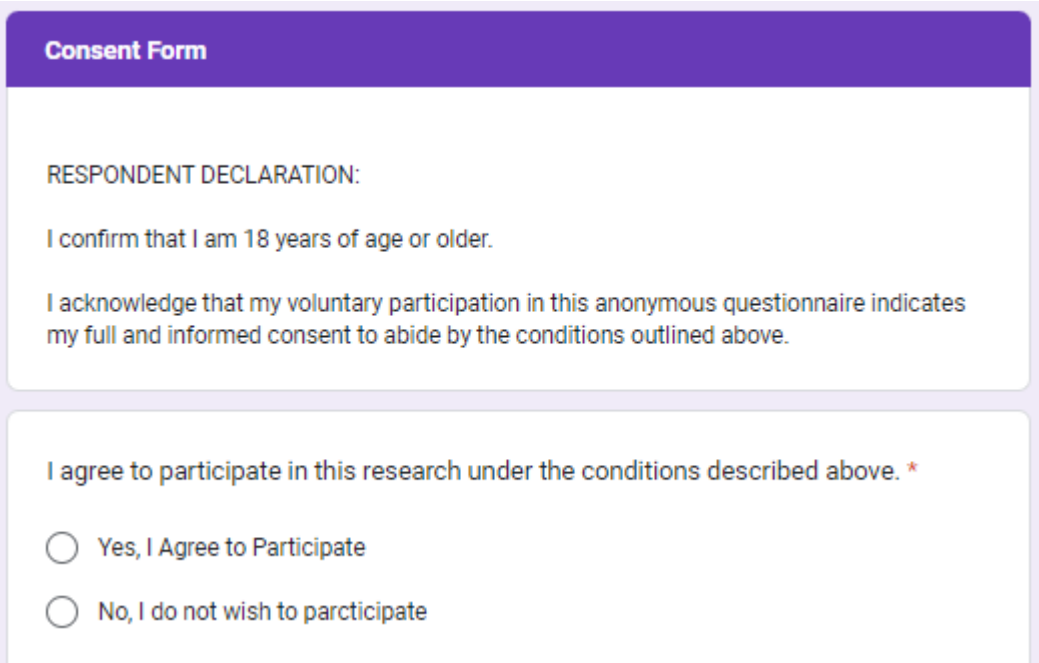

Figure 13 Consent Form

Meanwhile, the *Google Forms* also included demographic choices including gender, age, occupation, and years of work experience in this sector, providing context to the objectives presented in the earlier sections and which would be statistically analysed.

Each demographic was divided as follows;

Table 4 Google Forms Sample Survey as Submitted by Stakeholders

1.	Gender	Male / Female / Other
2.	Please specify your age group	21 to 30 ; 31 to 40 ; 41 to 50 ; 51 to 60 ; Over 60
3.	Please specify your current occupation	Please refer to Table 3 for Occupations
4.	Years working in the maritime sector	0 to 5; 6 to 10; 11 to 15; 16 to 20; > 20 years

In the subsequent sections, the questionnaire comprised of causal indicators, derived from both the identified gaps in literature. Participants were invited to provide ratings for each of these statements using a specified scale of criteria;

- 1 = *Strongly Disagree*
- 2 = *Disagree*
- 3 = *Neither Agree nor Disagree*
- 4 = *Agree*
- 5 = *Strongly Agree*

By employing this rating system, participants could express their level of agreement with each statement, allowing for a quantitative assessment of their views and opinions on the topics presented. This facilitated a clear and standardized assessment of participants' attitudes, helping to gather valuable data for analysis and drawing meaningful conclusions on this study. Below, is a representation of all the statements presented to participants in the Likert Survey.

Table 5 Likert Survey Causal Indicators

A. Familiarity and Engagement With ESG						
Focuses on the organization's familiarity with ESG concepts, budget allocation, involvement, training, and awareness of green financing options.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
A.1	You are very familiar with the concept of ESG					
A.2	Your Organisation is heavily involved in implementing, monitoring and maintaining the concept of ESG within your company					
A.3	Your organisation offers training and familiarisation courses to its employees on the concept of ESG					
A.4	Your organisation has professional employees with experience on ESG, employed.					
A.5	You have been actively involved in the implementation and maintaining of the ESG Concept within your organisation					
A.6	Your Organisation has budgeted funds towards compliance, monitoring and reviewing of ESG					
A.7	Your Organisation scrutinises third party providers / suppliers' ESG ratings prior to being appointed to work for your organisation					
A.8	You are familiar to the new Corporate Sustainability Reporting Directive (CSRD) Requirements imposed by the EU on ESG as from year 2025					

B. ESG Standards and Transparency						
This hypothesis pertains to the establishment of ESG standards, reporting mechanisms, and the importance of international standards for ESG financial reporting.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
B.1	Having a single international standard on ESG financial reporting facilitates an organisation's interest in complying to ESG					
B.2	Clear reporting mechanisms are important to improve transparency and comparability amongst competitors in the maritime sector					
B.3	Collaboration between shipping companies and industry associations could help in establishing comprehensive yet valid ESG standards					
B.4	Shipping companies that actively engage with investors interested in sustainability are more likely to gain access to funds for new investments and asset purchases.					

C. Prioritizing ESG aspects for Long Term Success						
Stakeholders' beliefs about the relative importance of social, governance, and environmental aspects in ESG compliance and the significance of ESG for long-term success.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
C.1	You consider the Social aspect to be the most important parameter in compliance towards ESG					
C.2	Your organisation considers the Social aspect to be the most important of the three					
C.3	Your organisation considers the Governance aspect to be the most important of the three					
C.4	All ESG parameters are considered equally important to your organisation					
C.5	You strongly believe that an organisation that ranks high ESG scores will provide a safer and more productive working environment					
C.6	You understand the significance that ESG plays in the long-term sustainable success of a company					
D. Leveraging Sustainability for Competitive Edge						
The focus here is on the benefits of sustainability efforts, including improved productivity, energy cost reduction, and enhanced competitive positioning.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
D.1	Customer engagement improves if sustainability initiatives are pursued by a shipping company					
D.2	Higher sustainability efforts improve productivity levels in shipping operations					
D.3	Sustainability efforts lower energy cost and waste consumption in shipping activities					

E. Environmental Benefits and Risk Perception						
Addresses the emphasis on environmental aspects, perceptions of risk in ESG investments, financial returns, and ship retrofitting challenges.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
E.1	All ESG parameters are considered equally important to you in your line of work					
E.2	You consider the Environmental aspect to be the most important parameter in compliance towards ESG					
E.3	Your organisation considers the Environmental aspect to be the most important of the three					
E.4	You consider the Governance aspect to be the most important parameter in compliance towards ESG					
E.5	Shipping companies that invest in Greenhouse Gas data analytical software positively improves its financial performance					
F. Financial Incentives and Brand Enhancement						
Perceptions of favourable financial terms for green investments and the positive correlation between prioritizing sustainability and brand enhancement contribute significantly to this component.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
F.1	Shipping companies that invest in green technologies, should be given favourable financial terms by investors					
F.2	Governments should incentivise the shipping industry to comply to greener initiatives in a bid to lower GHG emissions					
F.3	Prioritizing Sustainability positively improves a shipping company's brand positioning amongst competitors					
F.4	Customer engagement improves if sustainability initiatives are pursued by a shipping company					

F.5	A shipping company's reputation improves amongst competitors, when ESG is prioritised					
G. Challenges in ESG Compliance and Investments						
Reflects challenges related to limited resources for compliance, social investments, sustainable financing, and perceived benefits of investing in sustainable technologies.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
G.1	Shipping companies often face limited resources, thus rendering compliance to ESG a costly and unnecessary investment					
G.2	There is interest amongst maritime stakeholders, to invest in sustainable technologies due to the perceived benefits					
G.3	Social investments are considered crucial by shipping companies to foster a positive working environment					
H. Transparency and Competition						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
H.1	Shipping companies tend to withhold ESG information from the public, due to concerns related to competition and confidentiality					
H.2	High Ship retrofitting costs / investments to other sources of alternative fuel hinders shipping companies' sustainability efforts					

I. Operational Challenges in the Maritime Sector						
This hypothesis covers challenges posed by larger ships, port congestion, and its effects on operational efficiency.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
I.1	The maritime sector faces significant challenges in addressing environmental risks and operational inefficiencies caused by larger ships.					
I.2	Congestion and ship-queueing at ports pose significant ESG challenges in the maritime sector.					
J. Regulatory Uncertainty						
Stakeholders' perceptions of uncertainty in regulations and the challenges of compliance amid changing legislation on decarbonization.						
No.	**Statement in Likert Survey**	**1**	**2**	**3**	**4**	**5**
J.1	The uncertainty of future regulations creates challenges for shipping companies to plan for long term sustainability					
J.2	Constant changes to both National and International legislation on decarbonization creates less clarity for ship owners to motivate their interests in complying to ESG					

3.6 STATISTICAL ANALYSIS METHODOLOGY

Primary data is to be collected through a structured online survey filled in by maritime stakeholders representing diverse roles within the industry. Each hypothesis shall then be assessed using Cronbach's alpha for internal consistency and reliability of the causal indicators making up each hypothesis. Additionally, Confirmatory Factor Analysis (CFA) and consequentially Structural Equation Modelling (SEM) will be used to understand the interaction between the variables derived through the factor analysis.

The goal is to comprehensively comprehend the distinct demographic perspectives pertaining to the diverse implications, challenges, and opportunities described in the causal indicators. This endeavour will illuminate the contrasting viewpoints among maritime stakeholders based on factors such as gender, age groups, work experience, and occupation. A statistical technique known as *one-way Analysis of Variance* (ANOVA), shall also be employed to compare mean values among the different demographic variables thus computing the *between-groups sum of squares* to quantify differences in opinions amongst stakeholders and the *mean square* to assess average distinctions.

3.7 MATTERS OF ETHICAL SIGNIFICANCE

The research prioritized ethical considerations, particularly because stakeholders completing the surveys might have potential conflicts of interest due to their involvement in the study. To address these concerns, an introductory brief was provided along with the survey, containing an information leaflet, clearly articulating the

voluntary aspect of participation, and guaranteeing the confidentiality of all provided responses. For the sake of maintaining anonymity, no email addresses were collected during the submission of surveys. Moreover, it was emphasized that the researcher conducting the survey did not receive any compensation for this work, confirming that the research solely served educational purposes.

Furthermore, participants were informed that they could request a copy of the research results and findings by reaching out to the researcher, who was willing to provide them with the relevant information.

To facilitate data collection, an automated setup was utilized, where survey data was stored in a *Google Sheet Excel*, allowing easy downloading and extraction of data for statistical analysis using SPSS.

3.8 CHAPTER 3 - CONCLUSION

This chapter focused on the research methodologies utilized to analyse the concept of ESG among stakeholders in the maritime industry. Initially, a PRISMA analysis was executed, revealing intriguing hypotheses and identifying gaps that warranted further investigation. The research philosophies, namely *interpretivism* and *abductive* reasoning, were described, and both *purposive* and *convenience* sampling were chosen for sampling purposes. Furthermore, a detailed discussion concerning the chosen participants was provided. The creation and structure of the Likert survey were also deliberated upon. Finally, the upcoming chapter's research methodologies were outlined including statistical analysis which will be employed, accompanied by a comprehensive explanation of the pivotal ethical considerations that were established to ensure an impartial research approach.

4. RESULTS

4.1 CHAPTER 4 – INTRODUCTION

In this chapter, the results obtained through the Likert Survey will be presented. Factor analysis, structural equation modelling, and descriptive statistics will be employed to understand the survey results, deriving the necessary information on stakeholder perceptions of ESG in the maritime sector.

4.2 PARTICIPANT'S DEMOGRAPHICS

In order to comprehensively understand the perspectives and insights gathered in this research, it is imperative to establish a clear understanding of the diverse and dynamic demographic profile of the participants who engaged in the survey. This section presents an overview of the participants' characteristics, including their gender distribution, age groups, occupational backgrounds, and years of experience within the maritime sector. These demographic insights not only provide context for the subsequent findings and analyses but also enable a deeper appreciation of the views that have contributed to the analysis of this data.

The survey engaged a total of 120 participants, drawn from a broad spectrum of roles and experience levels within the maritime domain. The distribution of gender, with 108 male and 12 female participants, reflects the prevailing gender dynamics in this industry.

Participants' ages span over a wide range of categories, from the youthful perspectives of those aged 21 to 30, to the seasoned insights of individuals over the age of 60. The largest age group falls within the range of 31 to 40, with 48 participants, emphasizing the significance of capturing the perspectives of professionals at a pivotal stage in their careers.

Occupational diversity is evident through the involvement of various roles that contribute to the maritime landscape. With a total of 120 respondents, this diverse range of occupations ensures that the collected data encompass a broad spectrum of roles and responsibilities within the maritime sector.

Years of experience further enrich the demographic profile, with participants possessing a wide range of familiarity with the maritime industry. Those with 16 to 20 years of experience, as well as those with over 20 years, constitute significant portions of the respondents. This balance of perspectives from both early career professionals and seasoned veterans contributes to a comprehensive understanding of the issues, challenges, and opportunities faced across different stages of maritime careers.

By understanding the gender distribution, age groups, occupational backgrounds, and years of maritime experience of the participants, this section provides a comprehensive backdrop for the subsequent discussions and analyses. The insights shared by these diverse stakeholders collectively shape the foundation upon which the findings and conclusions of this research are built.

To ensure accuracy, we've included both the original Likert survey demographics and their grouped versions in the results section. Through the application of the grouped

versions, the sample size of 120 participants, which is relatively small, can be extended for the smaller demographic clusters. This expansion was achievable due to the viable pairing of numerous occupations.

Table 6 Demographic Survey Results (before grouping)

Variables	Categories	Frequency (N)	Percent (%)
Gender	Female	12	10.0
	Male	108	90.0
Age group	21 to 30	13	10.8
	31 to 40	47	39.2
	41 to 50	33	27.5
	51 to 60	15	12.5
	Over 60	12	10.0
Current occupation	Cargo / Bunker Surveyor	4	3.3
	Class Surveyor	5	4.2
	Flag Administration Officer / Marine Safety Investigation Office	16	13.3
	Marine Surveyor	6	5.0
	Maritime Lawyers	5	4.2
	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	14.2
	Naval Architect / Marine Engineer / Mechanical Engineer	26	21.7
	P&I Club Representative	9	7.5
	Pilot	7	5.8
	Port Authority Personnel	14	11.7
	Ship Local Agent Representative	7	5.8
	Ship Manager	4	3.3
Years Working in the Maritime Sector	0 to 5	14	11.7
	11 to 1	22	18.3
	16 to 2	14	11.7
	6 to 10	22	18.3
	Over 20	48	40.0

Table 7 Demographic Survey Results (after grouping)

Variables	Categories	Frequency (N)	Percent (%)
Gender	Female	12	10.0
	Male	108	90.0
Age group	21 to 40	60	50
	41 and above	60	50
Current occupation	Regulatory Body	42	35
	Owners Representatives	78	65
Years Working in the Maritime Sector	0 to 15	58	48.3
	16 and above	62	51.7

In order to properly visualise the sampled population, below are pie charts representing the different variable demographics, as originally divided in the surveys, and after re-grouping was conducted.

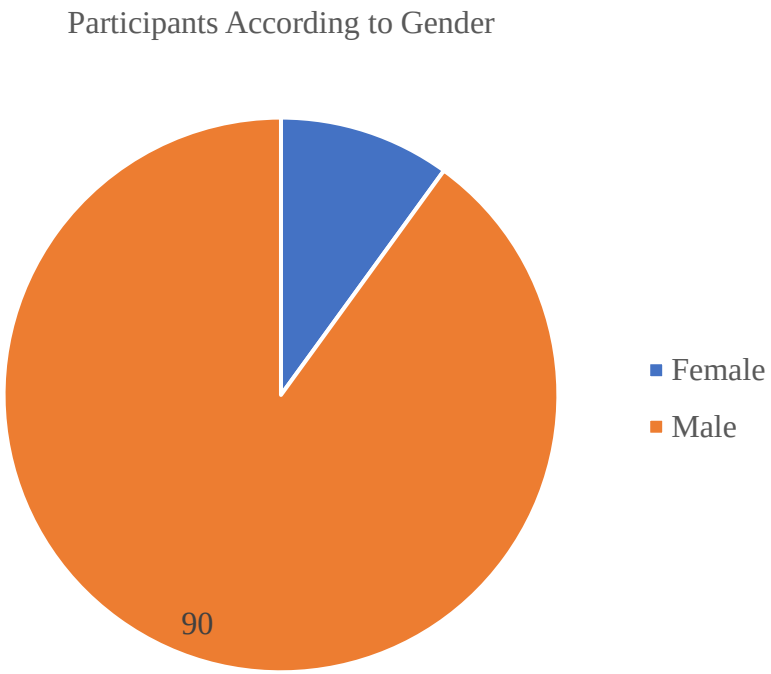

Figure 14 Participants According to Gender

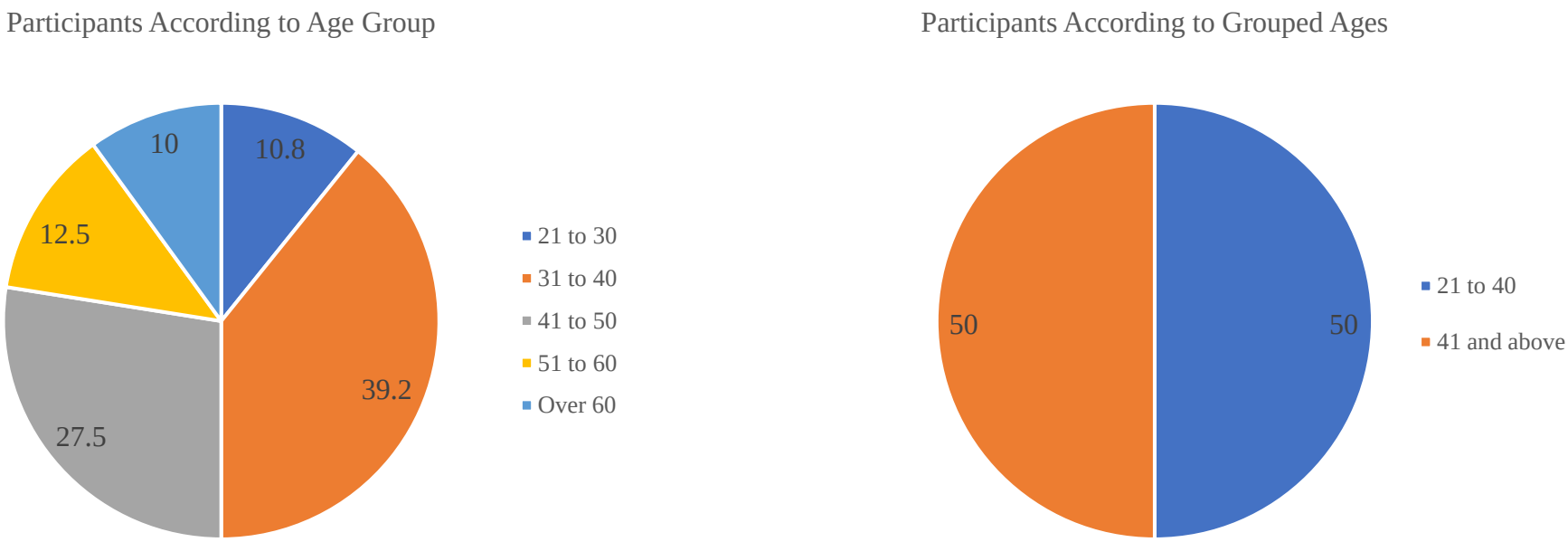

Figure 15 Age Group Demographic

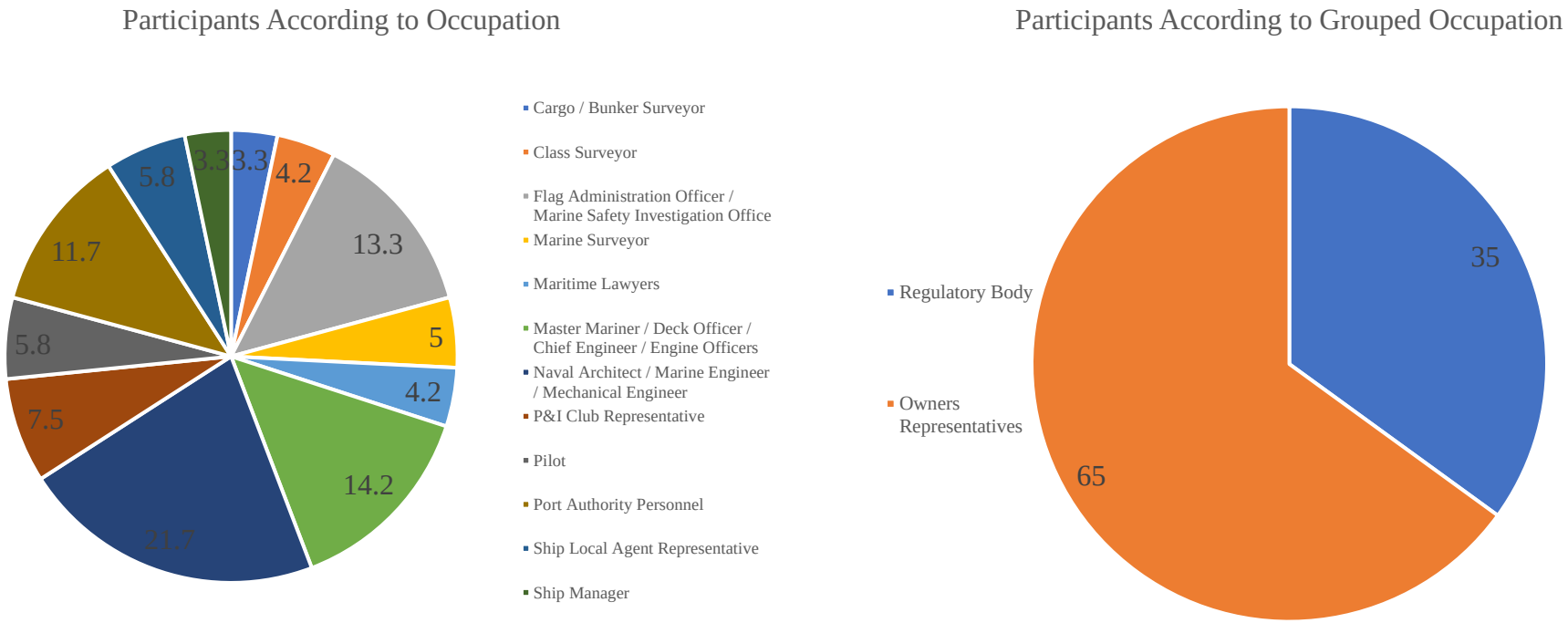

Figure 16 Occupation Demographics

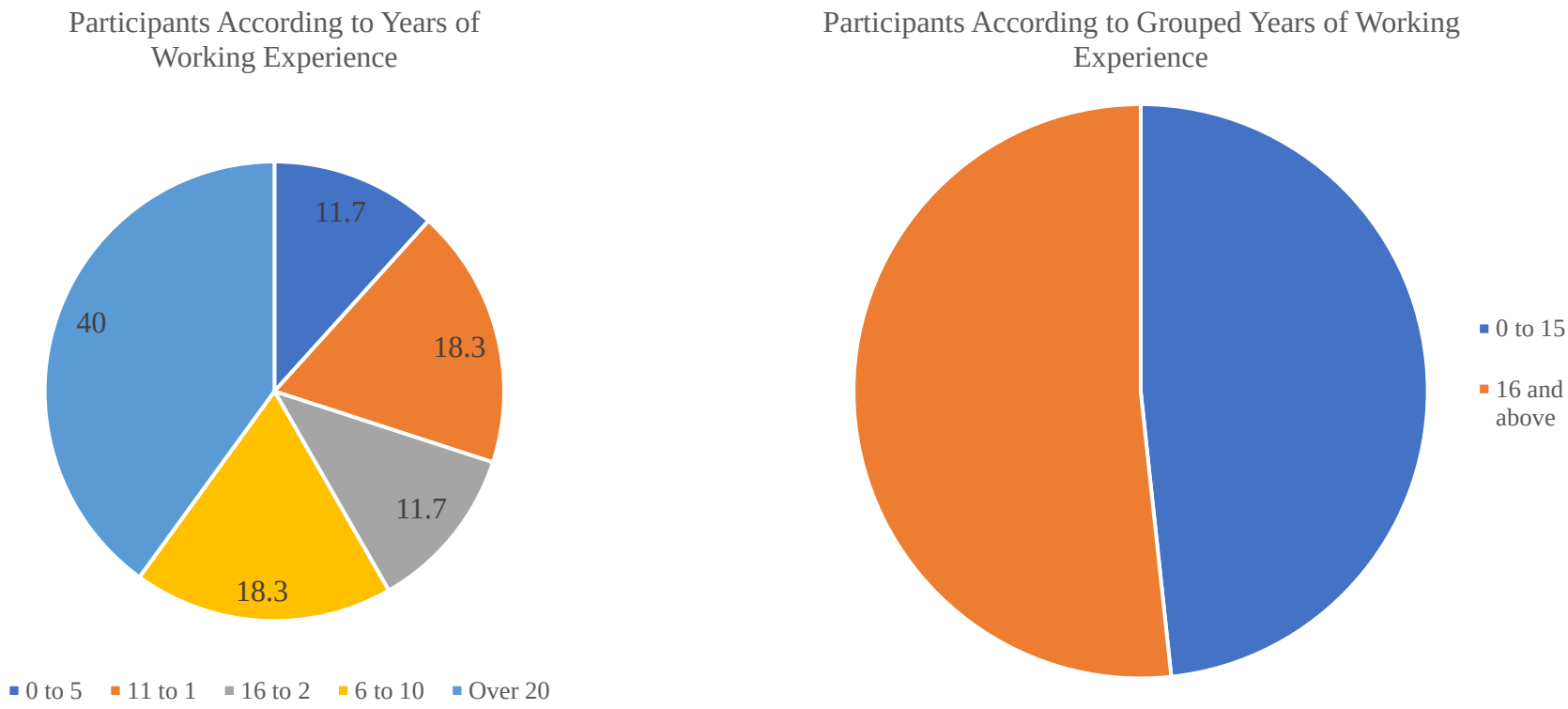

Figure 17 Years of Experience Demographic

4.3 CRONBACH'S ALPHA ANALYSIS

The causal indicators extracted from the Likert survey results, were assessed for reliability using the Cronbach's Alpha analysis (the results have been presented in the annex of this research). This statistical method served as a pivotal tool in evaluating the internal consistency and reliability of the statements used in the questionnaire (Hair, 2019). Calculating Cronbach's Alpha values for each hypothesis provides insights into the extent to which items within a given construct, measures the same underlying concept. The outcomes of this analysis provided a measure of the consistency of responses within constructs, facilitating a comprehensive understanding of the survey's reliability and the robustness of the data collected. This assessment was instrumental in ensuring the credibility of the survey results and enhancing the overall validity of the study's findings.

Table 8 Cronbach's Alpha applied to the different Hypotheses.

A. Familiarity and Engagement With ESG		**Cronbach's α**
A.1	You are very familiar with the concept of ESG	0.869
A.2	Your Organisation is heavily involved in implementing, monitoring and maintaining the concept of ESG within your company	
A.3	Your organisation offers training and familiarisation courses to its employees on the concept of ESG	
A.4	Your organisation has professional employees with experience on ESG, employed.	
A.5	You have been actively involved in the implementation and maintaining of the ESG Concept within your organisation	
A.6	Your Organisation has budgeted funds towards compliance, monitoring and reviewing of ESG	
A.7	Your Organisation scrutinises third party providers / suppliers' ESG ratings prior to being appointed to work for your organisation	
A.8	You are familiar to the new Corporate Sustainability Reporting Directive (CSRD) Requirements imposed by the EU on ESG as from year 2025	
B. ESG Standards and Transparency		
B.1	Having a single international standard on ESG financial reporting facilitates an organisation's interest in complying to ESG	0.858
B.2	Clear reporting mechanisms are important to improve transparency and comparability amongst competitors in the maritime sector	
B.3	Collaboration between shipping companies and industry associations could help in establishing comprehensive yet valid ESG standards	
B.4	Shipping companies that actively engage with investors interested in sustainability are more likely to gain access to funds for new investments and asset purchases.	

C. Prioritising ESG Aspects for Long Term Success		Cronbach's α
C.1	You consider the Social aspect to be the most important parameter in compliance towards ESG	0.826
C.2	Your organisation considers the Social aspect to be the most important of the three	
C.3	Your organisation considers the Governance aspect to be the most important of the three	
C.4	All ESG parameters are considered equally important to your organisation	
C.5	You strongly believe that an organisation that ranks high ESG scores will provide a safer and more productive working environment	
C.6	You understand the significance that ESG plays in the long-term sustainable success of a company	
D. Leveraging Sustainability for Competitive Edge		0.665
D.1	Customer engagement improves if sustainability initiatives are pursued by a shipping company	
D.2	Higher sustainability efforts improve productivity levels in shipping operations	
D.3	Sustainability efforts lower energy cost and waste consumption in shipping activities	

E. Environmental Benefits and Risk Perception		Cronbach's α
E.1	All ESG parameters are considered equally important to you in your line of work	0.656
E.2	You consider the Environmental aspect to be the most important parameter in compliance towards ESG	
E.3	Your organisation considers the Environmental aspect to be the most important of the three	
E.4	You consider the Governance aspect to be the most important parameter in compliance towards ESG	
E.5	Shipping companies that invest in Greenhouse Gas data analytical software positively improves its financial performance	
F. Financial Incentives and Brand Enhancement		
F.1	Shipping companies that invest in Green technologies, should be given favourable financial terms by investors	0.786
F.2	Governments should incentivise the shipping industry to comply to greener initiatives in a bid to lower GHG emissions	
F.3	Prioritizing Sustainability positively improves a shipping company's brand positioning amongst competitors	
F.4	A shipping company's reputation improves amongst competitors, when ESG is prioritised	

G. Challenges in ESG Compliance and Investments		Cronbach's α
G.1	Shipping companies often face limited resources, thus rendering compliance to ESG a costly and unnecessary investment	0.704
G.2	There is interest amongst maritime stakeholders, to invest in sustainable technologies due to the perceived benefits	
G.3	Social investments are considered crucial by shipping companies to foster a positive working environment	
H. Transparency and Competition		
H.1	Shipping companies tend to withhold ESG information from the public, due to concerns related to competition and confidentiality	*
H.2	High Ship retrofitting costs / investments to other sources of alternative fuel hinders shipping companies' sustainability efforts	
I. Regulatory Uncertainty		
I.1	The uncertainty of future regulations creates challenges for shipping companies to plan for long term sustainability	*
I.2	Constant changes to both National and International legislation on decarbonization creates less clarity for ship owners to motivate their interests in complying to ESG	
J. Collaboration and Regulatory Compliance		
J.1	Investing in new and sustainable technologies helps companies to improve their position amongst other competitors	*
J.2	Implementing internationally effective Emission Control Measures requires collaboration with regulatory bodies	

*The Cronbach's alpha calculation for sections H, I and J of the survey, were intentionally omitted as the hypotheses comprised of only two casual indicators. While Cronbach's alpha is a common method to assess the internal consistency of scales (Byrne, 2001), applying it to constructs with few items may yield to misleading outcomes. When dealing with just two items, the sensitivity of alpha values to minor

variations between items becomes prominent. Consequently, interpreting an alpha value in such instances might lead to an overestimation of reliability due to the simplicity of the scale.

4.4 CONFIRMATORY FACTOR ANALYSIS (CFA)

This section presents the outcomes of the multivariate statistical analysis, employed to uncover the underlying structure of the data collected from maritime stakeholders within the sector. This analysis will identify latent factors that drive patterns and relationships among variables, offering valuable insights into complex data configurations.

The analysis, which was carried out using the IBM SPSS software, used Confirmatory Factor Analysis (CFA) to quantify the proportion of variable variance explained by common factors. The analysis commenced by calculating initial factor loadings for each variable, indicating the strength of their association with extracted factors. Through iterative refinement, the analysis converged after 27 iterations.

Both the Composite Reliability (CR) and the Average Variance Extracted (AVE) were calculated for each of the 10 hypotheses, earlier presented in the research methodology section. The results of the CFA were then rendered using Analysis of Moment Structures (AMOS) diagram, representing the structural relationships among the factors, as a theoretical model, illustrating how different variables interact with each other based on the reliability and validity of the research model.

4.4.1 STRUCTURAL EQUATION MODELLING (SEM)

The fitness of the model was assessed against several criteria; *Chi-Square Test in Structural Equation Modelling* ($\chi 2$/df), *Comparative Fit Index* (CFI), *Tucker Lewis Index* (TLI), *Normed Fit Index* (NFI) and *Root Mean Square Error of Approximation* (RMSEA), According to (Holmes-Smith, 2002) and (Byrne, 2001), the most essential criteria are the *Comparative Fit Index* (CFI) and the *Root Mean Square Error of Approximation*, where the CFI attained an overall value of .754 and the RMSEA was calculated at .070. The results, including acceptable threshold value according to (Byrne, 2001) and (Holmes-Smith, 2002) are being presented below.

Table 9 Various Statistical Models used to Investigate the Model Fit Assessment adapted from (Byrne, 2001) & (Holmes-Smith, 2002)

Statistics	Obtained values	Acceptable Values
Ration of $\chi 2$ to degrees of freedom ($\chi 2$/df)	1.584	≤ 3.0 or between 1.0 - 5.0
Comparative fit index (CFI)	**.754**	**≥ 0.90**
Tucker-Lewis Index (TLI)	.709	≥ 0.90
Normed fitness index (NFI)	.554	≥ 0.90
Root Mean Square Error of Approximation (RMSEA)	**.070**	**≤ 0.08**

Based on the above, an examination of the potential root cause for the statistical models failing to meet or exceed the specified threshold was carried out and was narrowed down to inadequate sample size. As per the guidelines established by (Hair, 2019), as well as the earlier sample size calculation, having only 120 participants falls short of the

recommended minimum of 385 participants to obtain satisfactory results in factor analysis and structural equation modelling (SEM). While the Cronbach Alpha values yielded acceptable results, additional participants are needed for the factor analysis to yield valuable data for this research. Therefore, factor analysis will be deferred for future research that includes a larger sample size.

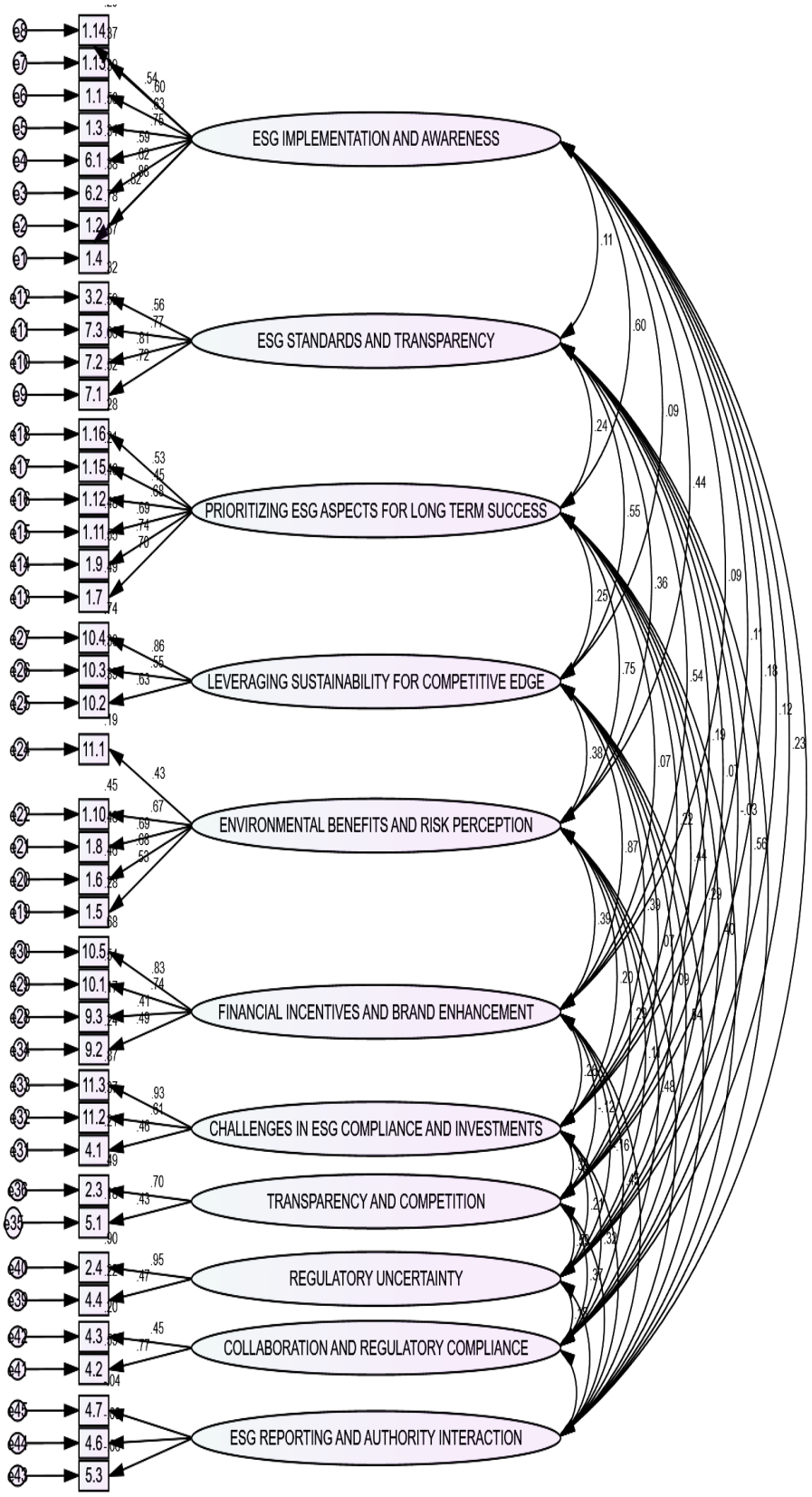

Figure 18 Confirmatory Factor Analysis Diagram using AMOS SPSS

4.5 DESCRIPTIVE STATISTICS

To rigorously analyse the data collected in this study, various statistical tests were employed to unveil meaningful insights. *Descriptive statistics*, including *standard deviations*, *standard errors*, and the *95% confidence intervals*, were conducted to provide an overview of the data's central tendency and dispersion. These analyses aided in summarizing the responses from maritime stakeholders across the different causal indicators, enhancing the comprehensiveness of our findings. To examine the relationships between the demographic variables and their perceptions of ESG factors, both *t-tests* and *one-way ANOVA* were performed. The following Analyses were conducted based on demographic variables, including gender, age, occupation, and work experience in the maritime sector. The results of the following tables will be elaborated upon and discussed further in the following chapter solely dedicated to discussions.

4.5.1 Hypothesis 1 – Familiarity and Engagement With ESG

This hypothesis focuses on the relationship between ESG implementation and awareness.

Table 10 Hypothesis 1 Statistical Analysis

HYPOTHESIS 1 – FAMILIARITY AND ENGAGEMENT WITH ESG

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	2.7311	.86187	.08293
Female	12	3.3056	.95713	.27630

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-2.167	118	.032	-.57446	.26510	-1.09942	-.04950

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	2.3846	.64249	.17819	1.9964	2.7729
31 to 40 years	47	2.8251	.92376	.13474	2.5538	3.0963
41 to 50 years	33	2.8788	.84179	.14654	2.5803	3.1773
51 to 60 years	15	3.1037	1.02823	.26549	2.5343	3.6731
Over 60 years	12	2.4410	.74149	.21405	1.9699	2.9121
Total	120	2.7885	.88462	.08075	2.6286	2.9484

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.392	4	1.348	1.767	.140
Within Groups	87.732	115	.763		
Total	93.124	119			

HYPOTHESIS 1 – FAMILIARITY AND ENGAGEMENT WITH ESG

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	2.9779	.95257	.23103	2.4882	3.4677
Naval Architect / Marine Engineer / Mechanical Engineer	26	2.2650	.75299	.14767	1.9608	2.5691
Flag Administration Officer / Marine Safety Investigation Officer	16	2.3681	.78012	.19503	1.9524	2.7838
Class Surveyor	5	3.4000	.91152	.40764	2.2682	4.5318
Cargo / Bunker Surveyor	4	2.8056	.10638	.05319	2.6363	2.9748
Pilot	7	3.1111	.90722	.34290	2.2721	3.9501
Ship Local Agent Representative	7	2.4762	.94219	.35611	1.6048	3.3476
Ship Manager	4	2.8611	.31914	.15957	2.3533	3.3689
P&I Club Representative	9	3.4444	.77579	.25860	2.8481	4.0408
Port Authority Personnel	14	2.9206	.73111	.19540	2.4985	3.3428
Maritime Lawyers	5	3.7333	.58584	.26200	3.0059	4.4608
Marine Surveyor	6	2.9815	1.05507	.43073	1.8743	4.0887
Total	120	2.7885	.88462	.08075	2.6286	2.9484

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22.672	11	2.061	3.160	.001
Within Groups	70.452	108	.652		
Total	93.124	119			

HYPOTHESIS 1 – FAMILIARITY AND ENGAGEMENT WITH ESG

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	2.6429	.79788	.21324	2.1822	3.1035
6 to 10 years	22	2.6768	.97464	.20779	2.2446	3.1089
11 to 15 years	22	2.6162	.80979	.17265	2.2571	2.9752
16 to 20 years	14	2.9841	1.01073	.27013	2.4006	3.5677
Over 20 years	48	2.9042	.86841	.12534	2.6521	3.1564
Total	120	2.7885	.88462	.08075	2.6286	2.9484

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.404	4	.601	.762	.552
Within Groups	90.720	115	.789		
Total	93.124	119			

4.5.2 Hypothesis 2 – ESG Standards and Transparency

This hypothesis is concerned with the establishment of ESG standards, mechanisms for reporting, and the significance of international standards for ESG financial reporting.

Table 11 Hypothesis 2 Statistical Analysis

HYPOTHESIS 2 – ESG STANDARDS AND TRANSPARENCY

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	4.0778	.57682	.05550
Female	12	4.0833	.67935	.19611

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-.031	118	.975	-.00556	.17866	-.35935	.34824

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.8000	.84459	.23425	3.2896	4.3104
31 to 40 years	47	4.2904	.49647	.07242	4.1447	4.4362
41 to 50 years	33	3.9955	.65531	.11407	3.7631	4.2278
51 to 60 years	15	3.9600	.33123	.08552	3.7766	4.1434
Over 60 years	12	3.9250	.38876	.11223	3.6780	4.1720
Total	120	4.0783	.58467	.05337	3.9727	4.1840

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.840	4	.960	2.997	.021
Within Groups	36.839	115	.320		
Total	40.679	119			

HYPOTHESIS 2 – ESG STANDARDS AND TRANSPARENCY

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	4.1529	.58107	.14093	3.8542	4.4517
Naval Architect / Marine Engineer / Mechanical Engineer	26	4.3115	.45262	.08877	4.1287	4.4944
Flag Administration Officer / Marine Safety Investigation Officer	16	4.0188	.72867	.18217	3.6305	4.4070
Class Surveyor	5	4.0000	.58310	.26077	3.2760	4.7240
Cargo / Bunker Surveyor	4	3.5500	.44347	.22174	2.8443	4.2557
Pilot	7	3.7429	.59682	.22558	3.1909	4.2948
Ship Local Agent Representative	7	3.8286	.57071	.21571	3.3007	4.3564
Ship Manager	4	3.9500	.66081	.33040	2.8985	5.0015
P&I Club Representative	9	4.3333	.48990	.16330	3.9568	4.7099
Port Authority Personnel	14	3.9714	.63176	.16885	3.6067	4.3362
Maritime Lawyers	5	3.8400	.65422	.29257	3.0277	4.6523
Marine Surveyor	6	4.2667	.39328	.16055	3.8539	4.6794
Total	120	4.0783	.58467	.05337	3.9727	4.1840

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.245	11	.477	1.453	.160
Within Groups	35.434	108	.328		
Total	40.679	119			

HYPOTHESIS 2 – ESG STANDARDS AND TRANSPARENCY

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	4.0714	.69107	.18470	3.6724	4.4704
6 to 10 years	22	4.3000	.38914	.08296	4.1275	4.4725
11 to 15 years	22	4.0000	.77090	.16436	3.6582	4.3418
16 to 20 years	14	4.1464	.75866	.20276	3.7084	4.5845
Over 20 years	48	3.9948	.45456	.06561	3.8628	4.1268
Total	120	4.0783	.58467	.05337	3.9727	4.1840

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.617	4	.404	1.190	.319
Within Groups	39.062	115	.340		
Total	40.679	119			

4.5.3 Hypothesis 3 – Prioritizing esg aspects for long-term success

This hypothesis investigates stakeholders' beliefs concerning the relative importance of ESG aspects in compliance and the significance of ESG for long-term success.

Table 12 Hypothesis 3 Statistical Analysis

HYPOTHESIS 3 – PRIORITIZING ESG ASPECTS FOR LONG-TERM SUCCESS

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.5688	.75213	.07237
Female	12	3.6429	.68782	.19856

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-.326	118	.745	-.07407	.22711	-.52382	.37567

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.2308	.95036	.26358	2.6565	3.8051
31 to 40 years	47	3.6109	.66052	.09635	3.4170	3.8049
41 to 50 years	33	3.5022	.86538	.15064	3.1953	3.8090
51 to 60 years	15	3.7905	.65436	.16895	3.4281	4.1528
Over 60 years	12	3.7500	.43555	.12573	3.4733	4.0267
Total	120	3.5762	.74356	.06788	3.4418	3.7106

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.840	4	.710	1.297	.275
Within Groups	62.953	115	.547		
Total	65.793	119			

HYPOTHESIS 3 – PRIORITIZING ESG ASPECTS FOR LONG-TERM SUCCESS

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	3.7899	.70912	.17199	3.4253	4.1545
Naval Architect / Marine Engineer / Mechanical Engineer	26	3.3956	.74867	.14683	3.0932	3.6980
Flag Administration Officer / Marine Safety Investigation Officer	16	3.2946	.94828	.23707	2.7893	3.7999
Class Surveyor	5	4.0000	.69985	.31298	3.1310	4.8690
Cargo / Bunker Surveyor	4	3.5000	.64418	.32209	2.4750	4.5250
Pilot	7	3.6735	.50652	.19145	3.2050	4.1419
Ship Local Agent Representative	7	3.1837	.56973	.21534	2.6568	3.7106
Ship Manager	4	4.0357	.65335	.32668	2.9961	5.0753
P&I Club Representative	9	3.5873	.78716	.26239	2.9822	4.1924
Port Authority Personnel	14	3.7347	.74937	.20028	3.3020	4.1674
Maritime Lawyers	5	3.9143	.45848	.20504	3.3450	4.4836
Marine Surveyor	6	3.5714	.69985	.28571	2.8370	4.3059
Total	120	3.5762	.74356	.06788	3.4418	3.7106

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.728	11	.612	1.118	.354
Within Groups	59.065	108	.547		
Total	65.793	119			

HYPOTHESIS 3 – PRIORITIZING ESG ASPECTS FOR LONG-TERM SUCCESS

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.2857	.78246	.20912	2.8339	3.7375
6 to 10 years	22	3.4610	.64181	.13683	3.1765	3.7456
11 to 15 years	22	3.4675	.91864	.19585	3.0602	3.8748
16 to 20 years	14	3.6735	.87961	.23509	3.1656	4.1813
Over 20 years	48	3.7351	.62443	.09013	3.5538	3.9164
Total	120	3.5762	.74356	.06788	3.4418	3.7106

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.078	4	.769	1.411	.235
Within Groups	62.716	115	.545		
Total	65.793	119			

4.5.4 Hypothesis 4 – Leveraging Sustainability for Competitive Edge

The focus of this hypothesis is on the benefits of sustainability efforts, including improved productivity, energy cost reduction, and enhanced competitive positioning.

Table 13 Hypothesis 4 Statistical Analysis

HYPOTHESIS 4 – LEVERAGING SUSTAINABILITY FOR COMPETITIVE EDGE

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.8750	.68742	.06615
Female	12	3.8333	.74874	.21614
Female	12	4.2500	.39886	.11514

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
.197	118	.844	.04167	.21098	-.37614	.45947

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.8462	.51578	.14305	3.5345	4.1578
31 to 40 years	47	4.0426	.75778	.11053	3.8201	4.2650
41 to 50 years	33	3.7879	.63775	.11102	3.5617	4.0140
51 to 60 years	15	3.8000	.59161	.15275	3.4724	4.1276
Over 60 years	12	3.5417	.75252	.21723	3.0635	4.0198
Total	120	3.8708	.69056	.06304	3.7460	3.9957

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.996	4	.749	1.603	.178
Within Groups	53.752	115	.467		
Total	56.748	119			

HYPOTHESIS 4 – LEVERAGING SUSTAINABILITY FOR COMPETITIVE EDGE

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	3.8824	.69663	.16896	3.5242	4.2405
Naval Architect / Marine Engineer / Mechanical Engineer	26	4.0577	.69752	.13680	3.7760	4.3394
Flag Administration Officer / Marine Safety Investigation Officer	16	3.7188	.81586	.20396	3.2840	4.1535
Class Surveyor	5	3.6000	.22361	.10000	3.3224	3.8776
Cargo / Bunker Surveyor	4	3.2500	.64550	.32275	2.2229	4.2771
Pilot	7	3.7143	.48795	.18443	3.2630	4.1656
Ship Local Agent Representative	7	3.7143	.80917	.30584	2.9659	4.4626
Ship Manager	4	4.1250	.85391	.42696	2.7662	5.4838
P&I Club Representative	9	4.0556	.63465	.21155	3.5677	4.5434
Port Authority Personnel	14	3.7500	.58012	.15504	3.4150	4.0850
Maritime Lawyers	5	4.1000	.74162	.33166	3.1792	5.0208
Marine Surveyor	6	4.0833	.80104	.32702	3.2427	4.9240
Total	120	3.8708	.69056	.06304	3.7460	3.9957

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.835	11	.440	.914	.529
Within Groups	51.913	108	.481		
Total	56.748	119			

HYPOTHESIS 4 – LEVERAGING SUSTAINABILITY FOR COMPETITIVE EDGE

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.8571	.77033	.20588	3.4124	4.3019
6 to 10 years	22	4.1136	.82997	.17695	3.7456	4.4816
11 to 15 years	22	3.8636	.69320	.14779	3.5563	4.1710
16 to 20 years	14	3.9643	.63441	.16955	3.5980	4.3306
Over 20 years	48	3.7396	.60132	.08679	3.5650	3.9142
Total	120	3.8708	.69056	.06304	3.7460	3.9957

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.250	4	.562	1.187	.320
Within Groups	54.498	115	.474		
Total	56.748	119			

4.5.5 Hypothesis 5 – Environmental Benefits and Risk Perception

This hypothesis addresses the emphasis on environmental aspects, perceptions of risk in ESG investments, financial returns, and ship retrofitting challenges.

Table 14 Hypothesis 5 Statistical Analysis

HYPOTHESIS 5 – ENVIRONMENTAL BENEFITS AND RISK PERCEPTION

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.4009	.65289	.06282
Female	12	3.4000	.51168	.14771

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
.005	118	.996	.00093	.19506	-.38535	.38720

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.2154	.66564	.18462	2.8131	3.6176
31 to 40 years	47	3.4170	.70751	.10320	3.2093	3.6248
41 to 50 years	33	3.4303	.63072	.10979	3.2067	3.6539
51 to 60 years	15	3.3733	.64083	.16546	3.0185	3.7282
Over 60 years	12	3.4917	.31176	.09000	3.2936	3.6898
Total	120	3.4008	.63834	.05827	3.2854	3.5162

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.598	4	.150	.359	.837
Within Groups	47.892	115	.416		
Total	48.490	119			

HYPOTHESIS 5 – ENVIRONMENTAL BENEFITS AND RISK PERCEPTION

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	3.6176	.62872	.15249	3.2944	3.9409
Naval Architect / Marine Engineer / Mechanical Engineer	26	3.4538	.75801	.14866	3.1477	3.7600
Flag Administration Officer / Marine Safety Investigation Officer	16	3.3875	.72835	.18209	2.9994	3.7756
Class Surveyor	5	2.7600	.81731	.36551	1.7452	3.7748
Cargo / Bunker Surveyor	4	3.2000	.40000	.20000	2.5635	3.8365
Pilot	7	3.2286	.65756	.24853	2.6204	3.8367
Ship Local Agent Representative	7	2.9143	.47409	.17919	2.4758	3.3527
Ship Manager	4	3.6000	.36515	.18257	3.0190	4.1810
P&I Club Representative	9	3.6444	.32830	.10943	3.3921	3.8968
Port Authority Personnel	14	3.4571	.45356	.12122	3.1953	3.7190
Maritime Lawyers	5	3.5600	.51769	.23152	2.9172	4.2028
Marine Surveyor	6	3.2667	.60222	.24585	2.6347	3.8987
Total	120	3.4008	.63834	.05827	3.2854	3.5162

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.926	11	.539	1.367	.199
Within Groups	42.564	108	.394		
Total	48.490	119			

HYPOTHESIS 5 – ENVIRONMENTAL BENEFITS AND RISK PERCEPTION

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.3714	.55391	.14804	3.0516	3.6912
6 to 10 years	22	3.3455	.76141	.16233	3.0079	3.6830
11 to 15 years	22	3.2545	.63600	.13560	2.9726	3.5365
16 to 20 years	14	3.5143	.77545	.20725	3.0666	3.9620
Over 20 years	48	3.4688	.56612	.08171	3.3044	3.6331
Total	120	3.4008	.63834	.05827	3.2854	3.5162

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.952	4	.238	.576	.681
Within Groups	47.538	115	.413		
Total	48.490	119			

4.5.6 Hypothesis 6 – Financial Incentives and Brand Enhancement

This hypothesis investigates stakeholders' perceptions of financial incentives for green investments and the positive impact of prioritizing sustainability on brand positioning.

Table 15 Hypothesis 6 Statistical Analysis

HYPOTHESIS 6 – FINANCIAL INCENTIVES AND BRAND ENHANCEMENT

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	4.0986	.52753	.05076
Female	12	4.3000	.37659	.10871

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-1.284	118	.202	-.20139	.15681	-.51192	.10914

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.9846	.55655	.15436	3.6483	4.3209
31 to 40 years	47	4.2394	.57879	.08442	4.0694	4.4093
41 to 50 years	33	4.0970	.47202	.08217	3.9296	4.2643
51 to 60 years	15	4.0133	.48087	.12416	3.7470	4.2796
Over 60 years	12	3.9833	.29568	.08535	3.7955	4.1712
Total	120	4.1188	.51674	.04717	4.0253	4.2122

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.320	4	.330	1.246	.295
Within Groups	30.455	115	.265		
Total	31.775	119			

HYPOTHESIS 6 – FINANCIAL INCENTIVES AND BRAND ENHANCEMENT

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	4.3088	.45834	.11116	4.0732	4.5445
Naval Architect / Marine Engineer / Mechanical Engineer	26	4.2154	.63226	.12400	3.9600	4.4708
Flag Administration Officer / Marine Safety Investigation Officer	16	4.0250	.45534	.11383	3.7824	4.2676
Class Surveyor	5	4.4000	.54772	.24495	3.7199	5.0801
Cargo / Bunker Surveyor	4	3.6000	.32660	.16330	3.0803	4.1197
Pilot	7	3.9714	.48206	.18220	3.5256	4.4173
Ship Local Agent Representative	7	3.8000	.57735	.21822	3.2660	4.3340
Ship Manager	4	4.0000	.71181	.35590	2.8674	5.1326
P&I Club Representative	9	4.2222	.47376	.15792	3.8581	4.5864
Port Authority Personnel	14	4.0571	.32336	.08642	3.8704	4.2438
Maritime Lawyers	5	4.0800	.48166	.21541	3.4819	4.6781
Marine Surveyor	6	4.1667	.49666	.20276	3.6455	4.6879
Total	120	4.1188	.51674	.04717	4.0253	4.2122

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.560	11	.324	1.239	.271
Within Groups	28.215	108	.261		
Total	31.775	119			

HYPOTHESIS 6 – FINANCIAL INCENTIVES AND BRAND ENHANCEMENT

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	4.1429	.58404	.15609	3.8056	4.4801
6 to 10 years	22	4.1568	.66194	.14113	3.8633	4.4503
11 to 15 years	22	4.1364	.51413	.10961	3.9084	4.3643
16 to 20 years	14	4.3000	.54208	.14488	3.9870	4.6130
Over 20 years	48	4.0333	.41028	.05922	3.9142	4.1525
Total	120	4.1188	.51674	.04717	4.0253	4.2122

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.857	4	.214	.797	.530
Within Groups	30.918	115	.269		
Total	31.775	119			

4.3.6 Hypothesis 7 – Challenges in ESG Compliance and Investments

This hypothesis reflects challenges related to limited resources for compliance, social investments, sustainable financing, and perceived benefits of investing in sustainable technologies.

Table 16 Hypothesis 7 Statistical Analysis

HYPOTHESIS 7 – CHALLENGES IN ESG COMPLIANCE AND INVESTMENTS

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.4861	.65374	.06291
Female	12	3.7500	.63066	.18205

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-1.331	118	.186	-.26389	.19828	-.65654	.12876

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.5769	.42555	.11803	3.3198	3.8341
31 to 40 years	47	3.4947	.76700	.11188	3.2695	3.7199
41 to 50 years	33	3.5530	.63663	.11082	3.3273	3.7788
51 to 60 years	15	3.4167	.54827	.14156	3.1130	3.7203
Over 60 years	12	3.5208	.61661	.17800	3.1291	3.9126
Total	120	3.5125	.65373	.05968	3.3943	3.6307

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.262	4	.065	.149	.963
Within Groups	50.595	115	.440		
Total	50.856	119			

HYPOTHESIS 7 – CHALLENGES IN ESG COMPLIANCE AND INVESTMENTS

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	3.8088	.48838	.11845	3.5577	4.0599
Naval Architect / Marine Engineer / Mechanical Engineer	26	3.3365	.81223	.15929	3.0085	3.6646
Flag Administration Officer / Marine Safety Investigation Officer	16	3.4844	.49555	.12389	3.2203	3.7484
Class Surveyor	5	3.7000	.67082	.30000	2.8671	4.5329
Cargo / Bunker Surveyor	4	3.3750	.92421	.46211	1.9044	4.8456
Pilot	7	3.5714	.53452	.20203	3.0771	4.0658
Ship Local Agent Representative	7	3.2500	.64550	.24398	2.6530	3.8470
Ship Manager	4	3.5625	.55434	.27717	2.6804	4.4446
P&I Club Representative	9	3.2778	.67828	.22609	2.7564	3.7992
Port Authority Personnel	14	3.9286	.53195	.14217	3.6214	4.2357
Maritime Lawyers	5	3.4000	.67546	.30208	2.5613	4.2387
Marine Surveyor	6	3.1250	.49371	.20156	2.6069	3.6431
Total	120	3.5125	.65373	.05968	3.3943	3.6307

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.962	11	.633	1.557	.122
Within Groups	43.894	108	.406		
Total	50.856	119			

HYPOTHESIS 7 – CHALLENGES IN ESG COMPLIANCE AND INVESTMENTS

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.4286	.66092	.17664	3.0470	3.8102
6 to 10 years	22	3.1591	.84355	.17985	2.7851	3.5331
11 to 15 years	22	3.5000	.59761	.12741	3.2350	3.7650
16 to 20 years	14	4.0000	.37978	.10150	3.7807	4.2193
Over 20 years	48	3.5625	.55663	.08034	3.4009	3.7241
Total	120	3.5125	.65373	.05968	3.3943	3.6307

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.297	4	1.574	4.063	.004
Within Groups	44.559	115	.387		
Total	50.856	119			

4.3.8 Hypothesis 8 – Transparency and Competition

The focus of this hypothesis is on the transparency of ESG information, retrofitting costs, and the competitive advantage gained by investing in sustainable technologies.

Table 17 Hypothesis 8 Statistical Analysis

HYPOTHESIS 8 – TRANSPARENCY AND COMPETITION

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.5324	.71130	.06844
Female	12	3.7500	.72300	.20871

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-1.004	118	.318	-.21759	.21678	-.64687	.21168

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.2308	.78037	.21644	2.7592	3.7023
31 to 40 years	47	3.6064	.84658	.12349	3.3578	3.8549
41 to 50 years	33	3.6667	.59512	.10360	3.4556	3.8777
51 to 60 years	15	3.5000	.50000	.12910	3.2231	3.7769
Over 60 years	12	3.4583	.54181	.15641	3.1141	3.8026
Total	120	3.5542	.71242	.06503	3.4254	3.6829

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.060	4	.515	1.015	.403
Within Groups	58.338	115	.507		
Total	60.398	119			

HYPOTHESIS 8 – TRANSPARENCY AND COMPETITION

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	3.4412	.55572	.13478	3.1555	3.7269
Naval Architect / Marine Engineer / Mechanical Engineer	26	3.4808	.98469	.19311	3.0830	3.8785
Flag Administration Officer / Marine Safety Investigation Officer	16	3.6875	.57373	.14343	3.3818	3.9932
Class Surveyor	5	3.9000	.65192	.29155	3.0905	4.7095
Cargo / Bunker Surveyor	4	3.7500	1.04083	.52042	2.0938	5.4062
Pilot	7	3.6429	.62678	.23690	3.0632	4.2225
Ship Local Agent Representative	7	3.2143	.39340	.14869	2.8505	3.5781
Ship Manager	4	3.3750	.25000	.12500	2.9772	3.7728
P&I Club Representative	9	3.6667	.86603	.28868	3.0010	4.3324
Port Authority Personnel	14	3.6071	.68440	.18291	3.2120	4.0023
Maritime Lawyers	5	3.5000	.50000	.22361	2.8792	4.1208
Marine Surveyor	6	3.5833	.66458	.27131	2.8859	4.2808
Total	120	3.5542	.71242	.06503	3.4254	3.6829

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.558	11	.233	.434	.937
Within Groups	57.840	108	.536		
Total	60.398	119			

HYPOTHESIS 8 – TRANSPARENCY AND COMPETITION

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.0714	1.07161	.28640	2.4527	3.6902
6 to 10 years	22	3.6591	.79262	.16899	3.3077	4.0105
11 to 15 years	22	3.5682	.47045	.10030	3.3596	3.7768
16 to 20 years	14	3.7500	.75320	.20130	3.3151	4.1849
Over 20 years	48	3.5833	.58649	.08465	3.4130	3.7536
Total	120	3.5542	.71242	.06503	3.4254	3.6829

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.087	4	1.022	2.087	.087
Within Groups	56.311	115	.490		
Total	60.398	119			

4.3.9 Hypothesis 9 – Operational Challenges in the Maritime Sector

This hypothesis covers challenges posed by larger ships, port congestion, and its effects on operational efficiency.

Table 18 Hypothesis 9 Statistical Analysis

HYPOTHESIS 9 – OPERATIONAL CHALLENGES IN THE MARITIME SECTOR

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.4907	.90166	.08676
Female	12	3.8750	.74239	.21431

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-1.422	118	.158	-.38426	.27022	-.91936	.15084

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.7692	.94902	.26321	3.1957	4.3427
31 to 40 years	47	3.5638	.94188	.13739	3.2873	3.8404
41 to 50 years	33	3.3788	.81038	.14107	3.0914	3.6661
51 to 60 years	15	3.4667	.91548	.23637	2.9597	3.9736
Over 60 years	12	3.6250	.88227	.25469	3.0644	4.1856
Total	120	3.5292	.89183	.08141	3.3680	3.6904

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.721	4	.430	.532	.712
Within Groups	92.927	115	.808		
Total	94.648	119			

HYPOTHESIS 9 – OPERATIONAL CHALLENGES IN THE MARITIME SECTOR

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	3.3824	1.08296	.26266	2.8255	3.9392
Naval Architect / Marine Engineer / Mechanical Engineer	26	3.7500	.85147	.16699	3.4061	4.0939
Flag Administration Officer / Marine Safety Investigation Officer	16	3.3125	.65511	.16378	2.9634	3.6616
Class Surveyor	5	3.8000	1.09545	.48990	2.4398	5.1602
Cargo / Bunker Surveyor	4	2.5000	1.08012	.54006	.7813	4.2187
Pilot	7	3.5000	.57735	.21822	2.9660	4.0340
Ship Local Agent Representative	7	3.2857	.90633	.34256	2.4475	4.1239
Ship Manager	4	3.8750	.85391	.42696	2.5162	5.2338
P&I Club Representative	9	3.3333	.93541	.31180	2.6143	4.0524
Port Authority Personnel	14	3.6786	.89027	.23793	3.1645	4.1926
Maritime Lawyers	5	4.2000	.75829	.33912	3.2585	5.1415
Marine Surveyor	6	3.5000	.83666	.34157	2.6220	4.3780
Total	120	3.5292	.89183	.08141	3.3680	3.6904

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.801	11	.982	1.265	.255
Within Groups	83.847	108	.776		
Total	94.648	119			

HYPOTHESIS 9 – OPERATIONAL CHALLENGES IN THE MARITIME SECTOR

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.6071	.92359	.24684	3.0739	4.1404
6 to 10 years	22	3.6591	.94348	.20115	3.2408	4.0774
11 to 15 years	22	3.4318	.94233	.20091	3.0140	3.8496
16 to 20 years	14	3.5714	1.10692	.29584	2.9323	4.2105
Over 20 years	48	3.4792	.79197	.11431	3.2492	3.7091
Total	120	3.5292	.89183	.08141	3.3680	3.6904

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.810	4	.202	.248	.910
Within Groups	93.838	115	.816		
Total	94.648	119			

4.3.10 Hypothesis 10 – Regulatory Uncertainty

This hypothesis analyses the Stakeholders' perceptions of uncertainty in regulations and the challenges of compliance amid changing legislation on decarbonization.

Table 19 Hypothesis 10 Statistical Analysis

HYPOTHESIS 10 – REGULATORY UNCERTAINTY

GENDER STATISTICAL ANALYSIS

Descriptive Statistics

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	108	3.9074	.77685	.07475
Female	12	4.2500	.39886	.11514

Independent Sample t-test of gender differences

	t-test for Equality of Means					
					95% Confidence Interval of the Difference	
t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
-1.502	118	.136	-.34259	.22813	-.79435	.10917

AGE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Age (years)	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
21 to 30 years	13	3.6154	.74032	.20533	3.1680	4.0628
31 to 40 years	47	4.0106	.77662	.11328	3.7826	4.2387
41 to 50 years	33	4.0758	.75126	.13078	3.8094	4.3421
51 to 60 years	15	4.0000	.62678	.16183	3.6529	4.3471
Over 60 years	12	3.5833	.73340	.21171	3.1174	4.0493
Total	120	3.9417	.75366	.06880	3.8054	4.0779

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.793	4	.948	1.709	.153
Within Groups	63.799	115	.555		
Total	67.592	119			

HYPOTHESIS 10 – REGULATORY UNCERTAINTY

OCCUPATIONAL GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Occupation	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Master Mariner / Deck Officer / Chief Engineer / Engine Officers	17	4.1176	.60025	.14558	3.8090	4.4263
Naval Architect / Marine Engineer / Mechanical Engineer	26	4.0192	.79348	.15561	3.6987	4.3397
Flag Administration Officer / Marine Safety Investigation Officer	16	3.9375	.68007	.17002	3.5751	4.2999
Class Surveyor	5	4.1000	.41833	.18708	3.5806	4.6194
Cargo / Bunker Surveyor	4	4.1250	.62915	.31458	3.1239	5.1261
Pilot	7	4.2857	.48795	.18443	3.8344	4.7370
Ship Local Agent Representative	7	3.8571	.85217	.32209	3.0690	4.6453
Ship Manager	4	3.7500	.50000	.25000	2.9544	4.5456
P&I Club Representative	9	3.5000	1.00000	.33333	2.7313	4.2687
Port Authority Personnel	14	3.6429	.96931	.25906	3.0832	4.2025
Maritime Lawyers	5	4.1000	.65192	.29155	3.2905	4.9095
Marine Surveyor	6	3.9167	.86120	.35158	3.0129	4.8204
Total	120	3.9417	.75366	.06880	3.8054	4.0779

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.103	11	.464	.802	.638
Within Groups	62.488	108	.579		
Total	67.592	119			

HYPOTHESIS 10 – REGULATORY UNCERTAINTY

WORK EXPERIENCE GROUP STATISTICAL ANALYSIS

Descriptive Statistics

Years	N	Mean	St. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
0 to 5 years	14	3.5714	.78095	.20872	3.1205	4.0223
6 to 10 years	22	3.7727	.90931	.19386	3.3696	4.1759
11 to 15 years	22	4.2727	.66775	.14236	3.9767	4.5688
16 to 20 years	14	4.0357	.77122	.20612	3.5904	4.4810
Over 20 years	48	3.9479	.65428	.09444	3.7579	4.1379
Total	120	3.9417	.75366	.06880	3.8054	4.0779

One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.084	4	1.271	2.338	.059
Within Groups	62.508	115	.544		
Total	67.592	119			

4.4 SUMMARISED GRAPH REPRESENTATIONS ACCORDING TO GROUPED DEMOGRAPHICS

	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Hypothesis 7	Hypothesis 8	Hypothesis 9	Hypothesis 10
21 to 40 years old	2.6049	4.0452	3.4209	3.9444	3.3162	4.1120	3.5358	3.4186	3.6665	3.8130
Standard deviation	0.3115	0.3468	0.2688	0.1389	0.1426	0.1802	0.0581	0.2656	0.1452	0.2794
41 and above	2.8078	3.9602	3.6809	3.7099	3.4318	4.0312	3.4968	3.5417	3.4902	3.8864
Standard deviation	0.3370	0.0353	0.1561	0.1458	0.0592	0.0589	0.0712	0.1103	0.1248	0.2652

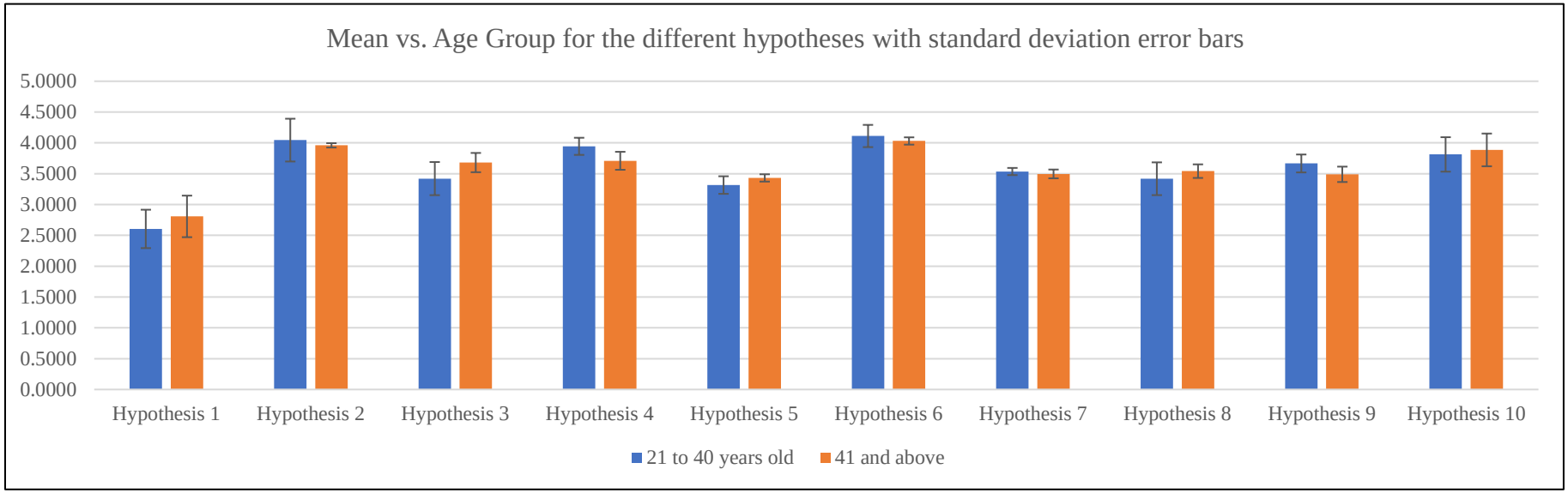

Figure 19 Summarised Age Groups plotted according to hypotheses.

	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Hypothesis 7	Hypothesis 8	Hypothesis 9	Hypothesis 10
Owner's Representative	2.9431	4.0291	3.6222	3.9085	3.4071	4.0491	3.3920	3.5014	3.4783	3.9232
Standard deviation	0.4754	0.2818	0.2795	0.3000	0.2588	0.2408	0.2107	0.1683	0.5038	0.2179
Regulatory Body	2.9500	3.9333	3.6757	3.6958	3.2083	4.1134	3.6711	3.7094	3.5728	3.9915
Standard deviation	0.4351	0.1284	0.2909	0.0658	0.3138	0.1943	0.1932	0.1313	0.2128	0.2725

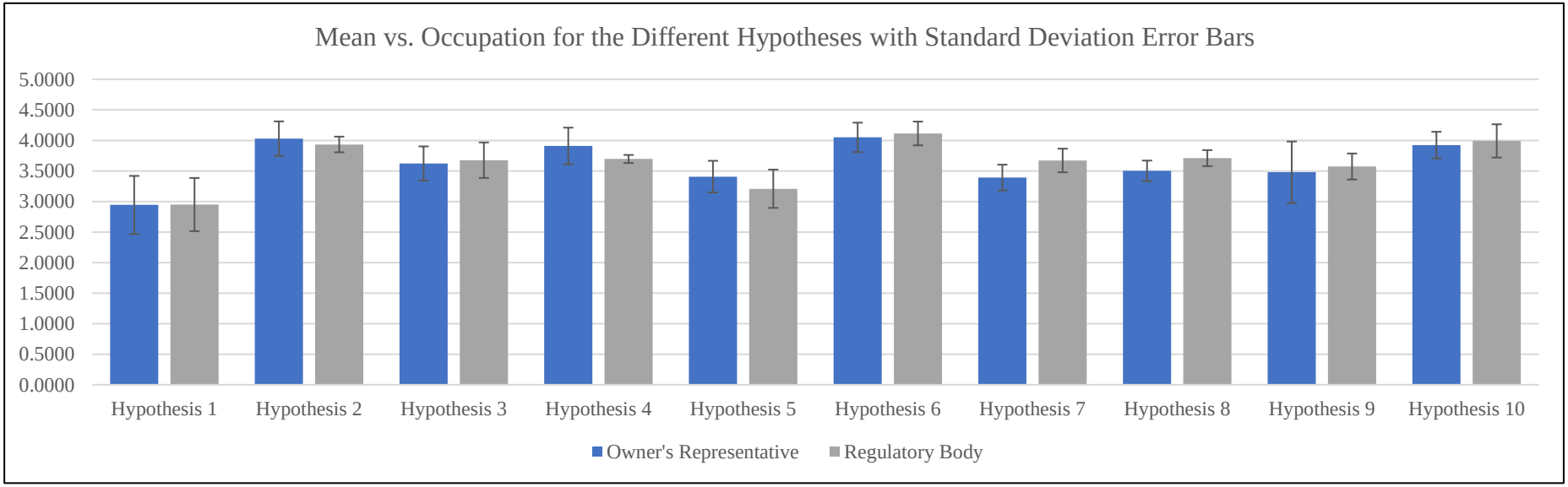

Figure 20 Summarised Occupations plotted according to hypotheses.

	Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4	Hypothesis 5	Hypothesis 6	Hypothesis 7	Hypothesis 8	Hypothesis 9	Hypothesis 10
0 to 15 Years	2.6453	4.1238	3.4047	3.9448	3.3238	4.1454	3.3626	3.4329	3.5660	3.8723
Standard deviation	0.0304	0.1567	0.1031	0.1463	0.0614	0.0104	0.1798	0.3164	0.1191	0.3611
16 Years and Above	2.9442	4.0706	3.7043	3.8520	3.4916	4.1667	3.7813	3.6667	3.5253	3.9918
Standard deviation	0.0565	0.1072	0.0436	0.1589	0.0322	0.1886	0.3094	0.1179	0.0652	0.0621

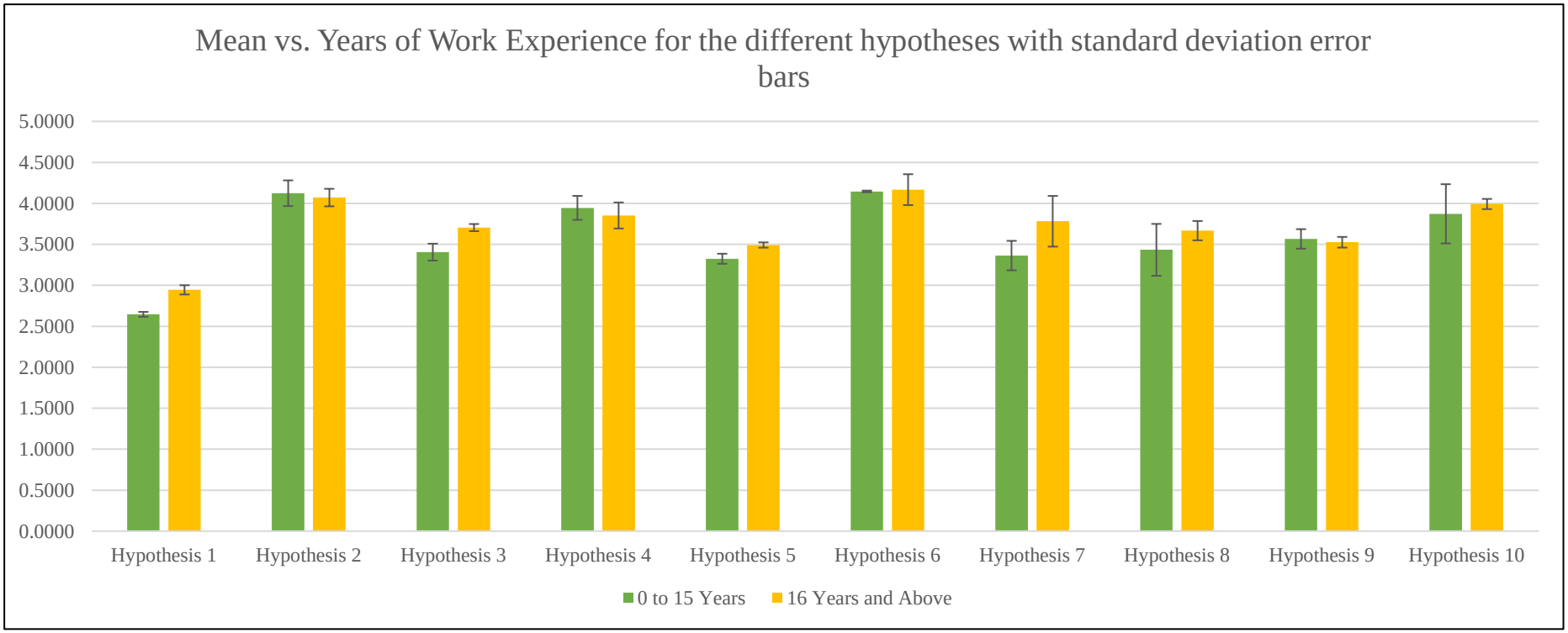

Figure 21 Summarised Years of working in the sector plotted according to hypotheses.

To visualize the results obtained in the above sections, bar charts have been plotted, accompanied by error bars corresponding to the standard deviation error calculated from the results for the grouped demographics highlighted in the methodology sections. Therefore, the grouped demographics, which include:

1. Years of age - 21 to 40 years old & 41 years old and above;
2. Occupation - Owner's Representative and Regulatory Body;
3. Years of Work Experience - 0 to 15 years and 16 years and above;

were plotted against the results from each of the 10 hypotheses. The results suggest different ideologies, perceptions, implications, challenges, and opportunities among the different demographic groups.

In the following Discussions chapter, an extensive analysis and commentary on the results obtained will be undertaken for each separate demographic.

4.5 CHAPTER 4 - CONCLUSIONS

The outcomes derived from the Likert Surveys underwent analysis through various statistical methodologies, including an in-depth statistical validation of the diverse demographic variables against the hypotheses and their relative causal indicators ranked by survey participants. The participants demographics were also analysed and plotted in pie charts for better visualisation.

5. DISCUSSION

5.1 CHAPTER 5 - INTRODUCTION

This chapter will provide a deeper understanding of the obtained results. It will encompass a discussion on the suitability of the statistical models and an examination of the hypotheses in relation to demographic variables. This analysis aims to clarify the impact of the ESG concept on each demographic variable.

5.2 GENERAL STATISTICAL DISCUSSION

The Cronbach's Alpha analysis independently assessed the causal indicators proposed in the 10 hypotheses constructed within the Likert Survey. Notably, this analysis demonstrated strong analytical results, with Cronbach's Alpha coefficients ranging from 0.656 to 0.869. According to literature, a coefficient value close to or greater than 0.7 is recommended to ensure the internal consistency and reliability of the survey's causal indicators. These coefficients were calculated using SPSS and are presented in Table 8 within the results section. Additionally, in line with the results section, hypotheses consisting of only two causal indicators were omitted from the Cronbach's Alpha calculation, as their inclusion could potentially yield misleading and biased outcomes. The obtained hypotheses exhibited a satisfactory Cronbach Alpha factor, suggesting the potential for using additional analysis using descriptive statistics, as detailed in the following sections. Furthermore, the discussion segment will incorporate graphs to provide a visual comprehension of the results across all hypotheses concerning various demographic variables such as age, occupation, years of experience in the sector, and gender.

5.3 DESCRIPTIVE STATISTICS, T-TESTS AND ANOVA TEST DISCUSSION ACCORDING TO FACTORISED HYPOTHESES

5.3.1 Hypothesis 1 Analysis Discussion

Table 20 Hypothesis 1 Discussion

Hypothesis 1 – Familiarity and Engagement with ESG (Refer to Table 10)	
Definition: *Focuses on the organization's familiarity with ESG concepts, budget allocation, involvement, training, and awareness of green financing options.*	
Factored Likert Survey Results:	
A.1	You are very familiar with the concept of ESG
A.2	Your Organisation is heavily involved in implementing, monitoring and maintaining the concept of ESG within your company
A.3	Your organisation offers training and familiarisation courses to its employees on the concept of ESG
A.4	Your organisation has professional employees with experience on ESG, employed.
A.5	You have been actively involved in the implementation and maintaining of the ESG Concept within your organisation
A.6	Your Organisation has budgeted funds towards compliance, monitoring and reviewing of ESG
A.7	Your Organisation scrutinises third party providers / suppliers' ESG ratings prior to being appointed to work for your organisation
A.8	You are familiar to the new Corporate Sustainability Reporting Directive (CSRD) Requirements imposed by the EU on ESG as from year 2025

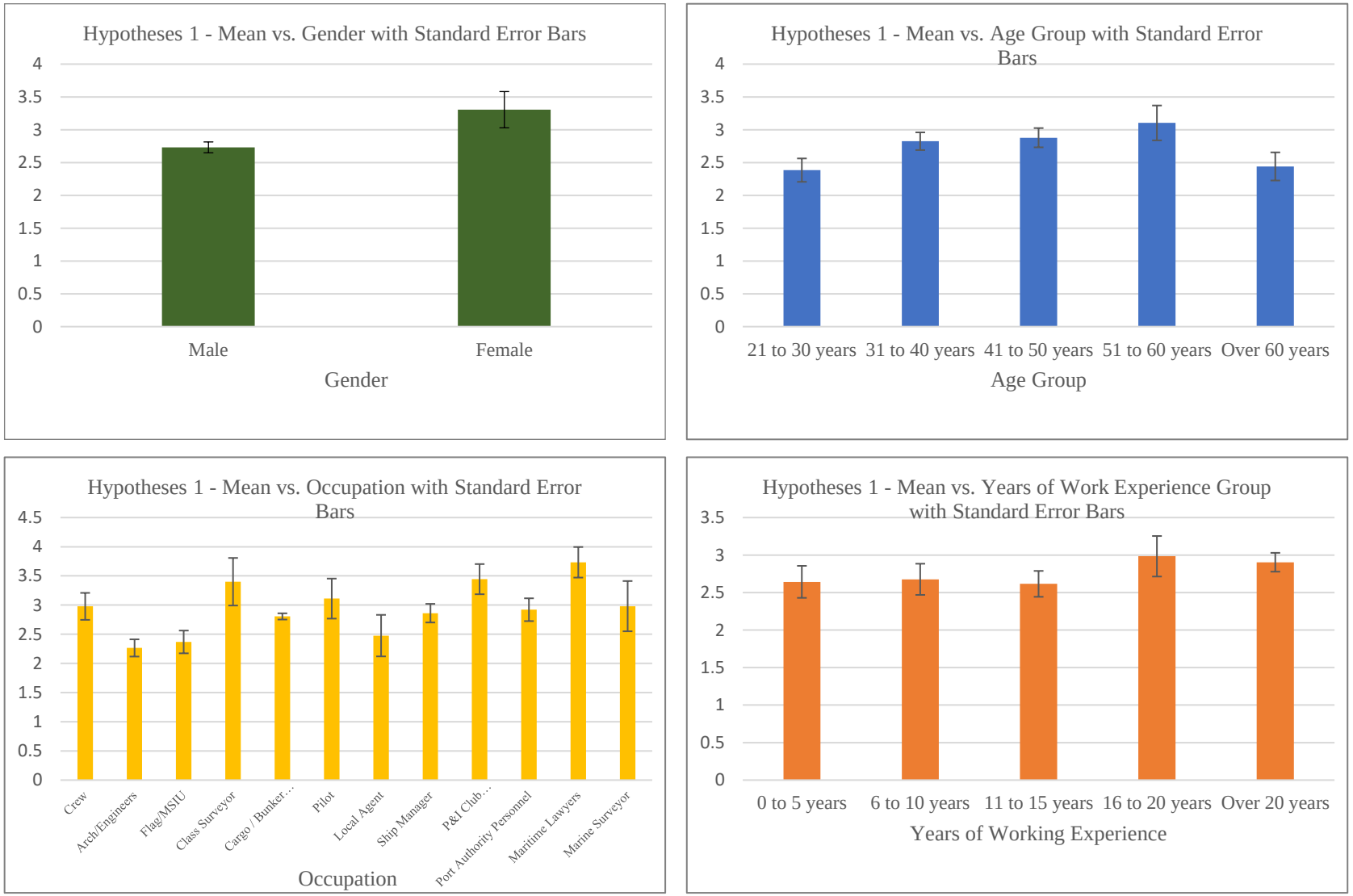

Figure 22 Hypothesis 1 Graphical Representation

Gender

Males have a mean ESG Implementation and Awareness score of 2.7311 (SD = 0.86187), indicating moderate awareness. Female participants scored higher at 3.3056 (SD = 0.95713), indicating greater awareness. The larger SD among females indicates more diverse responses. The independent sample t-test revealed a statistically significant gender difference for hypothesis 1 (t = -2.167, df = 118, p = .032, two-tailed). Females exhibited a higher level of awareness and implementation compared to males, with a mean difference of -0.57446 (SE = 0.26510).

Age

Participants aged 51 to 60 years have the highest mean score of 3.1037 (SD = 1.02823), followed by 41- to 50-year-olds with a mean of 2.8788 (SD = 0.84179). 31- to 40-year-olds also score relatively high at 2.8251 (SD = 0.92376). Younger participants aged 21 to 30 years have a mean of 2.3846 (SD = 0.64249). Participants over 60 years score 2.4410 (SD = 0.74149). The overall mean for all age groups is 2.7885 (SD = 0.88462). These findings suggest that older age groups tend to exhibit higher ESG Implementation and Awareness scores, with variability observed across the age spectrum.

The one-way ANOVA was conducted to assess differences across varying age groups. The analysis indicates that there is no statistically significant difference for hypothesis 1 between the age groups (F = 1.767, df = 4, 115, p = .140). The results show that the variation *Between Groups* accounts for a sum of squares of 5.392, while the variation *Within Groups* accounts for a larger sum of squares of 87.732. The total variability in ESG Implementation and Awareness is 93.124. Given the non-significant p-value, there is insufficient evidence to conclude that the means of ESG Implementation and Awareness significantly differ across the age groups.

Occupation

Among different groups, Maritime Lawyers have the highest mean score of 3.7333 (SD = 0.58584), indicating a strong awareness and implementation of ESG principles. Class Surveyors also exhibit high awareness with a mean of 3.4000 (SD = 0.91152). On the other hand, Naval Architects / Marine Engineers (N = 26) have a mean of 2.2650 (SD = 0.75299), suggesting comparatively lower ESG awareness. The data suggest variability across the occupational groups, with some displaying higher awareness than others. The one-way ANOVA results reveal a statistically significant difference between the groups ($F = 3.160$, $df = 11, 108$, $p < .001$). The variation *Between Groups* accounts for a sum of squares of 22.672, while the variation *Within Groups* accounts for 70.452. The total variability in ESG Implementation and Awareness is 93.124. The significant p-value indicates that at least one occupation group's mean score differs significantly from the others.

Work Experience

Regarding work experience, those with over 20 years had relatively high awareness (Mean = 2.9042, SD = 0.86841), as did those with 16 to 20 years (Mean = 2.9841, SD = 1.01073). Participants with 6 to 10 years, 0 to 5 years, and 11 to 15 years of experience had moderate awareness (means around 2.6 to 2.7). One-way ANOVA indicated no significant difference between experience groups ($F = 0.762$, $df = 4, 115$, $p = 0.552$).

5.3.2 Hypothesis 2 Analysis Discussion

Table 21 Hypothesis 2 Discussion

Hypothesis 2 – ESG Standards and Transparency (Refer to Table 11).	
Definition: *This hypothesis pertains to the establishment of ESG standards, reporting mechanisms, and the importance of international standards for ESG financial reporting.*	
Factored Likert Survey Results:	
B.1	Having a single international standard on ESG financial reporting facilitates an organisation's interest in complying to ESG
B.2	Clear reporting mechanisms are important to improve transparency and comparability amongst competitors in the maritime sector
B.3	Collaboration between shipping companies and industry associations could help in establishing comprehensive yet valid ESG standards
B.4	Shipping companies that actively engage with investors interested in sustainability are more likely to gain access to funds for new investments and asset purchases.

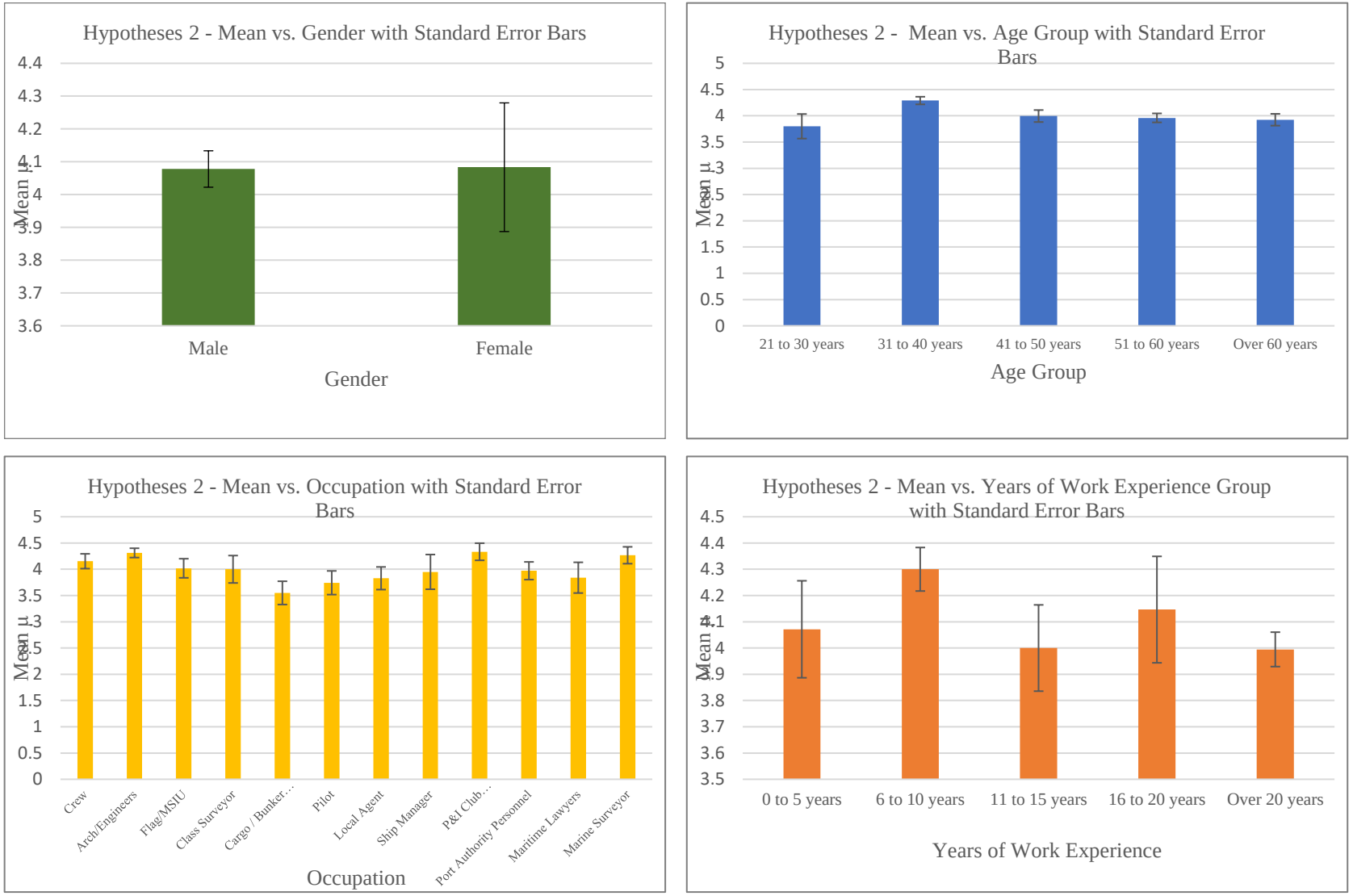

Figure 23 Hypothesis 2 Graphical Representation

Gender

Male participants have a mean score of 4.0778 (SD = 0.57682), while females (N = 12) have a slightly higher mean of 4.0833 (SD = 0.67935), suggesting a generally high level of ESG Standards and Transparency among both genders. The standard errors indicate the precision of the estimates. The independent sample t-test was conducted to examine gender differences revealing no statistically significant difference in means between genders (t = -0.031, df = 118, p = 0.975, two-tailed). The mean difference is -0.00556, with a standard error of 0.17866. These findings indicate that there is no significant gender disparity in ESG Standards and Transparency scores.

Age

Participants aged 31 to 40 years have the highest mean score of 4.2904 (SD = 0.49647), indicating a relatively strong perception of ESG Standards and Transparency. Age groups 41 to 50 years and 51 to 60 years also score well with means of 3.9955 (SD = 0.65531) and 3.9600 (SD = 0.33123) respectively. Younger participants aged 21 to 30 years (N = 13) have a mean of 3.8000 (SD = 0.84459), and those over 60 years (N = 12) score 3.9250 (SD = 0.38876). The overall mean for all age groups is 4.0783 (SD = 0.58467). These findings suggest that participants across different age groups generally perceive high ESG Standards and Transparency, with some variation across the age spectrum. The one-way ANOVA indicated a statistically significant difference between the groups (F = 2.997, df = 4, 115, p = 0.021). The significant p-value suggests that at least one age group's mean score significantly differs from the others.

Occupation

Naval Architects / Marine Engineers / Mechanical Engineers exhibit the highest mean score of 4.3115 (SD = 0.45262), indicating a strong perception of ESG Standards and Transparency. Master Mariners / Deck Officers / Chief Engineers / Engine Officers and Flag Administration Officers / Marine Safety Investigation Officers also show favourable scores with means of 4.1529 (SD = 0.58107) and 4.0188 (SD = 0.72867) respectively. Maritime Lawyers (N = 5) have a mean of 3.8400 (SD = 0.65422), representing comparatively lower scores among the occupation groups. The one-way ANOVA results indicate no statistically significant difference between the occupation groups ($F = 1.453$, $df = 11, 108$, $p = 0.160$).

Work Experience

Those with 6 to 10 years of experience exhibit the highest mean score of 4.3000 (SD = 0.38914), indicating a strong perception of ESG Standards and Transparency. Respondents with 0 to 5 years (N = 14) and those with over 20 years (N = 48) report mean scores of 4.0714 (SD = 0.69107) and 3.9948 (SD = 0.45456) respectively. The one-way ANOVA analysis does not yield a statistically significant result ($F = 1.190$, $df = 4, 115$, $p = 0.319$).

5.3.3 Hypothesis 3 Analysis Discussion

Table 22 Hypothesis 2 Discussion

Hypothesis 3 – Prioritizing ESG Aspects for Long-Term Success (Refer to Table 12).	
Definition: *Stakeholders' beliefs about the relative importance of social, governance, and environmental aspects in ESG compliance and the significance of ESG for long-term success.*	
Factored Likert Survey Results:	
C.1	You consider the Social aspect to be the most important parameter in compliance towards ESG
C.2	Your organisation considers the Social aspect to be the most important of the three
C.3	Your organisation considers the Governance aspect to be the most important of the three
C.4	All ESG parameters are considered equally important to your organisation
C.5	You strongly believe that an organisation that ranks high ESG scores will provide a safer and more productive working environment
C.6	You understand the significance that ESG plays in the long-term sustainable success of a company

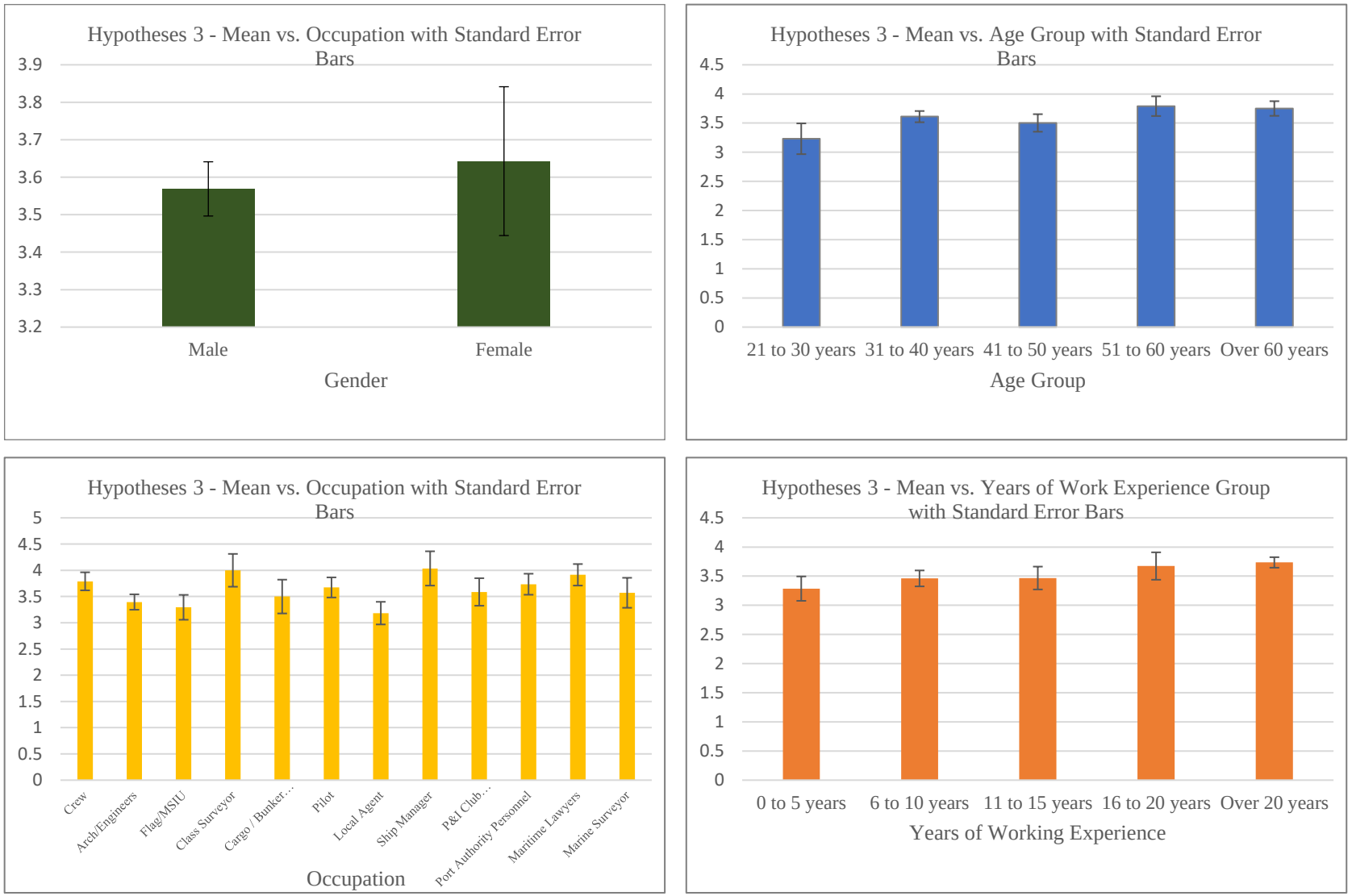

Figure 24 Hypothesis 3 Graphical Representation

Gender

Males resulted in a mean score of 3.5688 (SD = 0.75213), while among females (N = 12), the mean score is slightly higher at 3.6429 (SD = 0.68782). The standard error of the mean for males is 0.07237, and for females, it is 0.19856. This suggests that both genders have relatively similar perceptions regarding the prioritization of ESG aspects for long-term success, with females showing a slightly higher mean score. The independent sample t-test indicates that there is no significant gender difference in perceptions. The t-value is -0.326 with 118 degrees of freedom, resulting in a non-significant p-value of 0.745. The mean difference between genders is -0.07407, with a standard error of 0.22711.

Age

Among the age groups, those aged 51 to 60 exhibit the highest mean score of 3.7905, indicating a relatively stronger emphasis on ESG considerations. On the other hand, the age group of 21 to 30 has the lowest mean score of 3.2308, reflecting a slightly lower focus on ESG aspects. The overall mean score for all respondents is 3.5762, suggesting a moderate level of ESG prioritization across the entire sample. The calculated F-value is 1.297, and the associated p-value is 0.275, which are above the conventional significance threshold of 0.05. This suggests that the observed differences in mean scores among age groups are not statistically significant, indicating that age does not appear to significantly influence the prioritization of ESG aspects for long-term success.

Occupation

Master Mariner / Deck Officer / Chief Engineer / Engine Officers have the highest mean score of 3.7899, indicating a relatively higher priority assigned to ESG aspects.

Conversely, the Ship Local Agent Representative occupation group has the lowest mean score of 3.1837, suggesting a slightly lower prioritization of ESG aspects. The confidence intervals for the mean scores provide a range within which the true population mean is likely to fall. These results demonstrate variations in ESG aspect prioritization among different occupation groups. The one-way ANOVA resulted in a between-groups sum of squares of 6.728 with 11 degrees of freedom, resulting in a mean square of 0.612. The calculated F-statistic is 1.118, and the associated p-value is 0.354, which indicates that the differences between occupation groups in terms of ESG aspect prioritization are not statistically significant.

Work Experience

The mean scores for prioritizing ESG aspects are as follows: 0 to 5 years (3.2857), 6 to 10 years (3.4610), 11 to 15 years (3.4675), 16 to 20 years (3.6735), and over 20 years (3.7351). These scores reflect respondents' perceptions of the importance of ESG aspects for long-term success. The results of a one-way ANOVA test shows that the variance B*etween Groups* (3.078) is larger than the variance *Within Groups* (62.716), resulting in an F-statistic of 1.411. The associated significance level (Sig.) is 0.235, indicating no statistically significant difference in perceptions across the different working experience categories. Therefore, the working experience of respondents does not appear to have a significant impact on their prioritization of ESG aspects for long-term success.

5.3.4 Hypothesis 4 Analysis Discussion

Table 23 Hypothesis 4 Discussion

Hypothesis 4 – Leveraging Sustainability for Competitive Edge (Refer to Table 13).	
Definition: *The focus of this hypothesis is on the benefits of sustainability efforts, including improved productivity, energy cost reduction, and enhanced competitive positioning.*	
Factored Likert Survey Results:	
D.1	Customer engagement improves if sustainability initiatives are pursued by a shipping company
D.2	Higher sustainability efforts improve productivity levels in shipping operations
D.3	Sustainability efforts lower energy cost and waste consumption in shipping activities

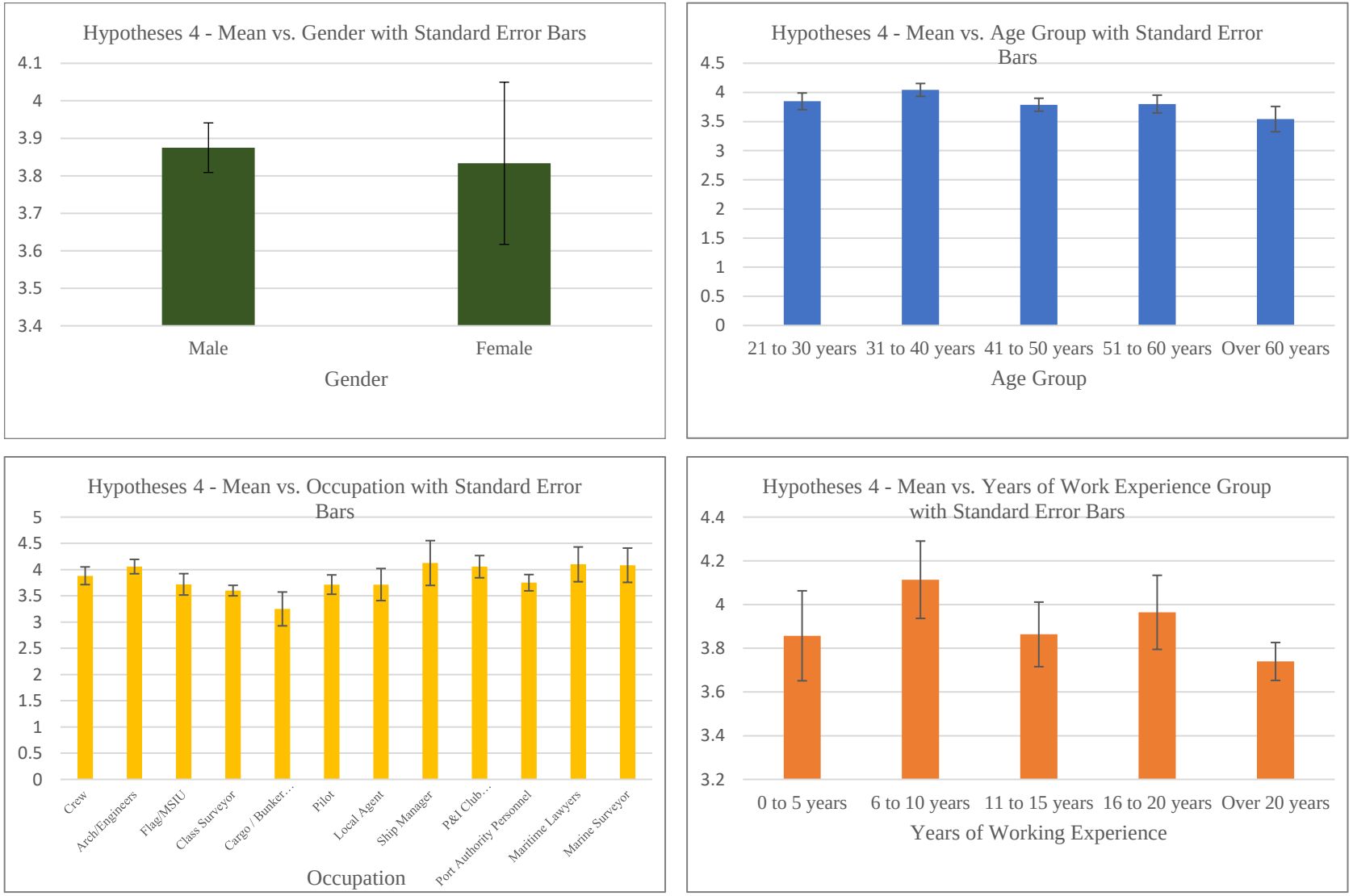

Figure 25 Hypothesis 4- Graphical Representation

Gender

Males had an average score of 3.8750 (SD 0.68742) while female participants resulted in two entries being provided: one with an average score of 3.8333 and a standard deviation of 0.74874, and another with an average score of 4.2500 and a standard deviation of 0.39886. This suggests that male participants, on average, scored slightly higher in leveraging sustainability for competitive edge compared to females, though the two female entries indicate some variability in responses. The t-test's significance value of 0.844, which is above the conventional threshold of 0.05, suggests that the observed mean difference of 0.04167 is not statistically significant meaning there is no significant gender difference in the perception of leveraging sustainability for competitive edge among the participants.

Age

Respondents aged 31 to 40 years have the highest mean score of 4.0426, indicating a relatively higher perception of leveraging sustainability for competitive advantage. Conversely, respondents aged over 60 years have the lowest mean score of 3.5417, suggesting a relatively lower perception in this context. A one-way ANOVA was conducted across the different age groups resulting in the sum of squares *between groups* of 2.996, with 4 degrees of freedom and a corresponding mean square of 0.749. The calculated F-statistic is 1.603. The associated significance level (Sig.) is 0.178, which does not fall below the typical significance threshold (e.g., 0.05).

Occupation

The occupation groups with the highest mean scores included Naval Architects, Marine Engineers, Mechanical Engineers (Mean = 4.0577) and Maritime Lawyers (Mean = 4.1000). Conversely, Cargo/Bunker Surveyors and Ship Managers have relatively lower mean scores (Mean = 3.2500 and Mean = 4.1250, respectively). These statistics provide a concise overview of how different occupation groups perceive and integrate sustainability for competitive advantage in the maritime industry. A one-way ANOVA compared variations *between occupation groups* (Sum of Squares = 4.835, df = 11) with variation *within groups* (Sum of Squares = 51.913, df = 108). The F-statistic of 0.914 suggests no significant differences between occupation groups' perceptions (Sig. = 0.529). In essence, the study does not find statistically significant variation in perceptions of leveraging sustainability for competitive advantage among the different occupations.

Work Experience

The "6 to 10 years" experience group stands out with the highest mean score of 4.1136, indicating a particularly strong perception of leveraging sustainability for competitive gain. Conversely, respondents with "Over 20 years" of experience exhibit the lowest mean score of 3.7396, suggesting a relatively less pronounced inclination towards perceiving sustainability as a competitive edge. These findings shed light on how perceptions vary across experience levels regarding the role of sustainability in gaining a competitive edge. A one-way ANOVA analysis explored the influence of varying years of working experience on perceptions of leveraging sustainability for competitive advantage. The analysis suggests that the impact of working experience on the perception of leveraging sustainability for competitive advantage is not significant.

5.3.5 Hypothesis 5 Analysis Discussion

Table 24 Hypothesis 5 Discussion

Hypothesis 5 – Environmental Benefits and Risk Perception (Refer to Table 14).	
Definition: *This hypothesis addresses the emphasis on environmental aspects, perceptions of risk in ESG investments, financial returns, and ship retrofitting challenges.*	
Factored Likert Survey Results:	
E.1	All ESG parameters are considered equally important to you in your line of work
E.2	You consider the Environmental aspect to be the most important parameter in compliance towards ESG
E.3	Your organisation considers the Environmental aspect to be the most important of the three
E.4	You consider the Governance aspect to be the most important parameter in compliance towards ESG
E.5	Shipping companies that invest in Greenhouse Gas data analytical software positively improves its financial performance

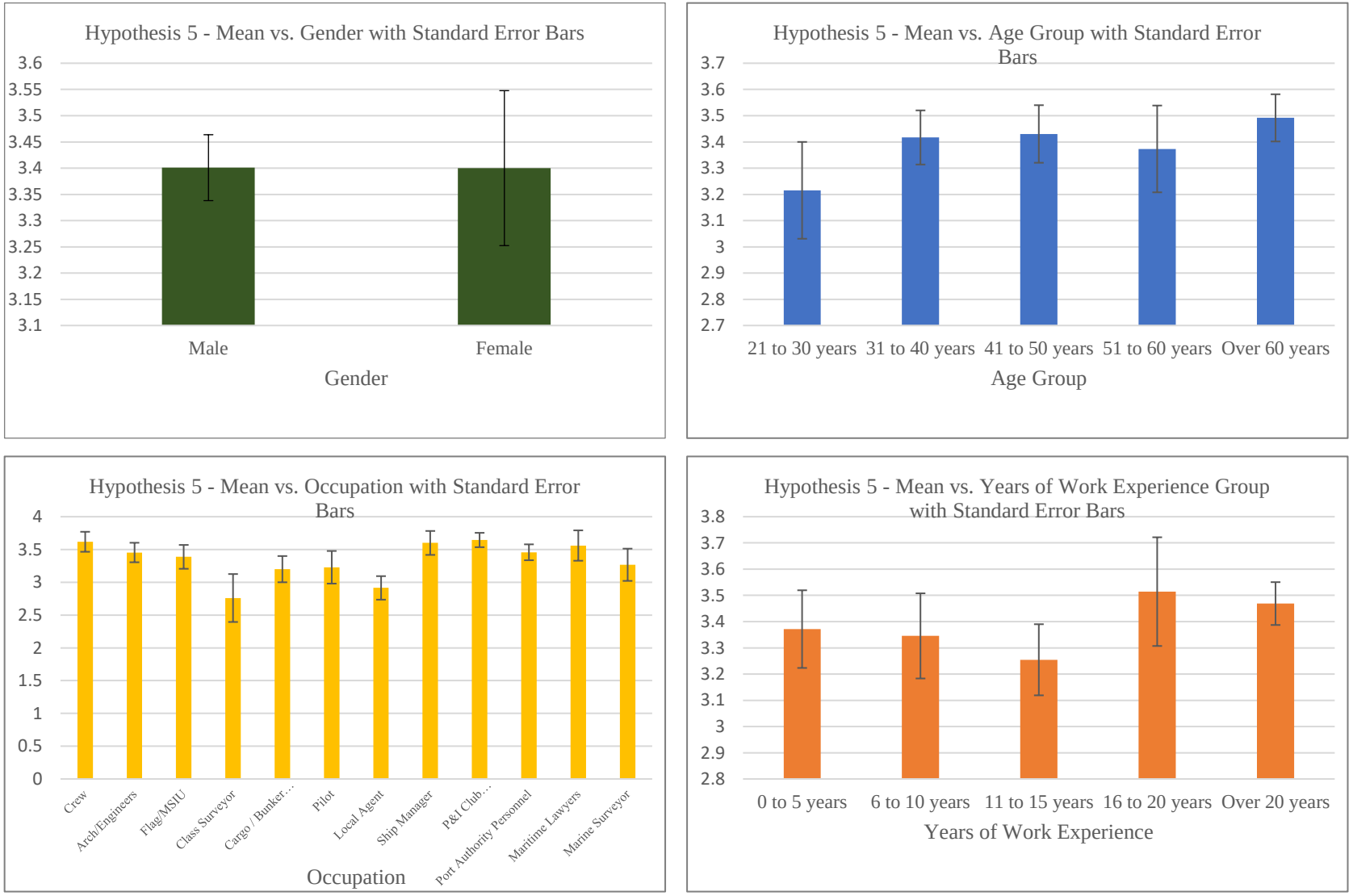

Figure 26 Hypothesis 5 Graphical Representation

Gender

Interestingly, both male and female respondents show similar mean scores for environmental benefits and risk reception, with males averaging 3.4009 and females averaging 3.4000. The outcomes of the independent sample t-test, reveals a p-value of .996, indicating that the observed differences are not statistically significant. The mean difference is .00093, and the standard error of the difference is .19506. The 95% confidence interval for the difference spans from -.38535 to .38720, indicating a range within which the true difference is likely to fall. Overall, the analysis suggests that there is no statistically significant gender-based disparities in perceptions of environmental benefits and risk reception.

Age

Notably, the highest mean score is observed in the "Over 60 years" age group, with a mean of 3.4917, while the lowest mean score is found in the "21 to 30 years" age group, with a mean of 3.2154, suggesting that respondents aged over 60 have the most positive perception of environmental benefits and risk reception, while those aged 21 to 30 exhibit a slightly lower perception. A further analysis explored the relationship between age groups and perceptions of environmental benefits and risk reception. The *Between Groups* component, examining differences among age groups, reveals a sum of squares of 0.598, with 4 degrees of freedom and a mean square of 0.150. The calculated F-statistic is 0.359, and the associated significance value (Sig.) is 0.837. This suggests that the differences in perceptions across age groups are not statistically significant based on conventional thresholds. Conversely, the *Within Groups* section, reflecting variability within each age group, amounts to 47.892, with 115 degrees of freedom and a mean square of 0.416. The analysis indicates that there are no statistically significant

differences in perceptions of environmental benefits and risk reception among the different age groups, as the F-statistic does not reach conventional levels of significance.

Occupation

The occupation group of "Master Mariner / Deck Officer / Chief Engineer / Engine Officers" holds the highest mean score at 3.6176, suggesting a relatively positive perception of environmental benefits and risk reception. On the other hand, the "Class Surveyor" group has the lowest mean score of 2.7600, indicating a comparatively less favourable perception. An analysis examining the connection between various occupation groups and perceptions of environmental benefits and risk reception was also carried out. The *Between Groups*, assessing differences among occupation groups, yields a non-significant F-statistic of 1.367 (Sig. = 0.199) suggesting that the differences in perceptions of environmental benefits and risk reception across occupation groups are not statistically significant according to conventional thresholds. *Within Groups* variability totals 42.564, and the "Total" variation is 48.490. In essence, the analysis does not find statistically significant variations in these perceptions among the different occupation groups.

Work Experience

The highest mean score is observed in the "16 to 20 years" group, (mean of 3.5143) while the lowest mean score is found in the "11 to 15 years" group (mean of 3.2545). These statistics suggest that respondents with 16 to 20 years of experience exhibit the most positive perception of environmental benefits and risk reception, whereas those with 11 to 15 years of experience hold a slightly less positive perception. An analysis examining the connection between varying years of working experience and perceptions

of environmental benefits and risk reception was also carried out. The *Between Groups* segment, which scrutinizes differences among experience groups, shows a non-significant F-statistic of 0.576, implying that the differences in perceptions of environmental benefits and risk reception among the experience groups are not statistically significant according to conventional standards. The *Within Groups* variability within each experience group totals 47.538, and the "Total" variation is 48.490. In essence, the analysis does not identify statistically significant variations in these perceptions among respondents with different years of working experience.

5.3.6 Hypothesis 6 Analysis Discussion

Table 25 Hypothesis 6 Discussion

Hypothesis 6 – Financial Incentives and Brand Enhancement (Refer to Table 15).	
Definition: *This hypothesis investigates stakeholders' perceptions of financial incentives for green investments and the positive impact of prioritizing sustainability on brand positioning.*	
Factored Likert Survey Results:	
F.1	Shipping companies that invest in Green technologies, should be given favourable financial terms by investors
F.2	Governments should incentivise the shipping industry to comply to greener initiatives in a bid to lower GHG emissions
F.3	Prioritizing Sustainability positively improves a shipping company's brand positioning amongst competitors
F.4	Customer engagement improves if sustainability initiatives are pursued by a shipping company

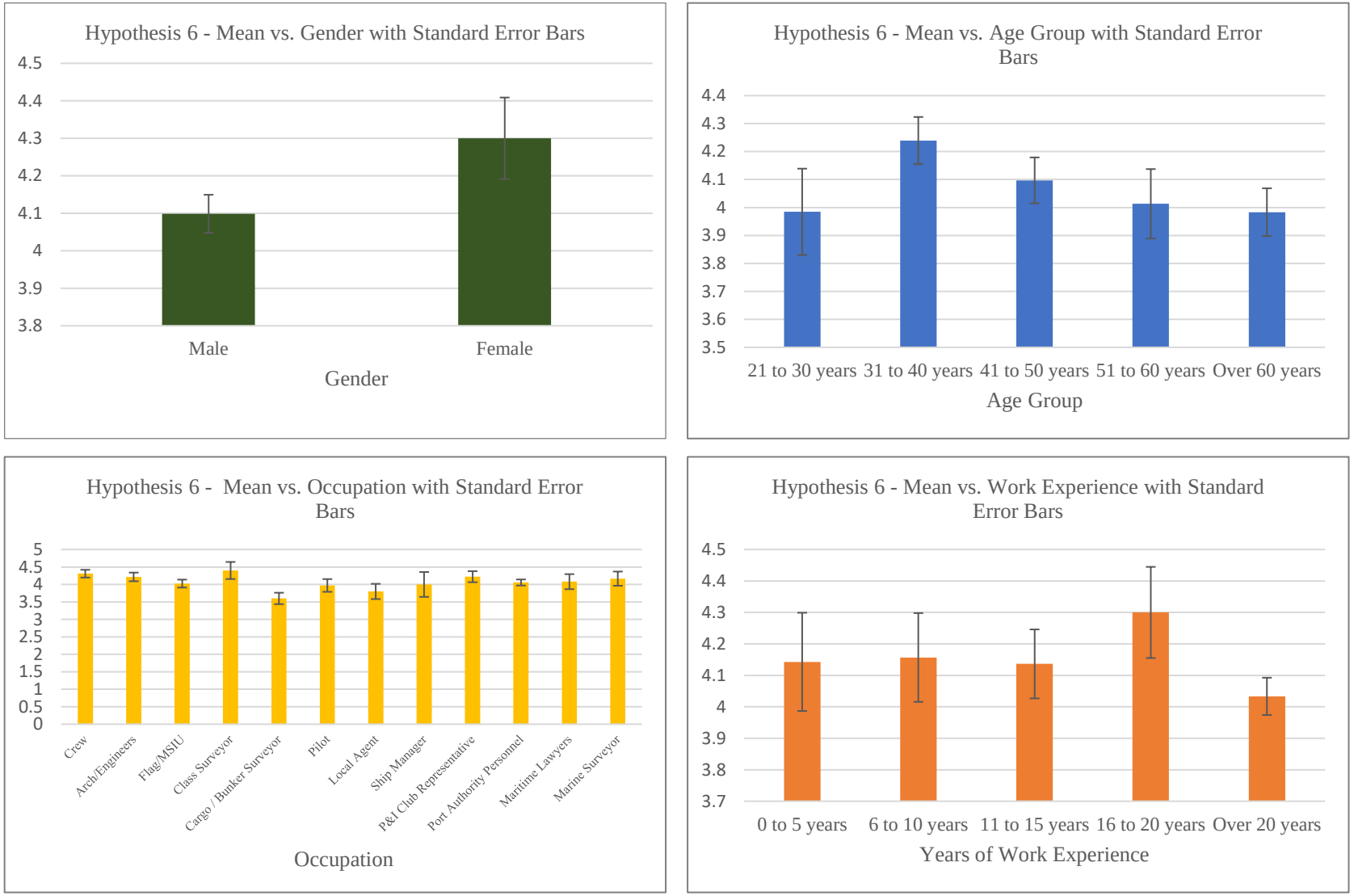

Figure 27 Hypothesis 6 Graphical Representation

Gender

Males exhibit a mean of 4.0986, suggesting a favourable perception of financial incentives and brand enhancement. In contrast, the female respondents display a higher mean score of 4.3000, indicating an even more positive perception in this regard. The standard deviation values of 0.52753 for males and 0.37659 for females suggest relatively consistent perceptions within each gender group. The t-test yields a t-value of -1.284 and a significance value (Sig.) of .202. These results indicate that gender does not significantly influence perceptions of financial incentives and brand enhancement.

Age

Respondents aged "31 to 40 years" exhibit the highest mean score (4.2394), indicating a favourable perception of hypothesis 6. Conversely, those aged "Over 60 years" have the lowest mean score (3.9833). The overall sample mean score is 4.1188. These statistics offer insights into how perceptions of financial incentives and brand enhancement vary across different age groups, with those in the "31 to 40 years" group expressing the most positive perception and those aged "Over 60 years" showing a relatively less positive view. The relationship between age groups and perceptions of financial incentives and brand enhancement was also examined. The *Between Groups* component indicates non-significant differences (F = 1.246, Sig. = 0.295) in perceptions among age groups. The *Within Groups* variability is 30.455, and the "Total" variation is 31.775. In summary, the analysis doesn't identify statistically significant variations in perceptions of financial incentives and brand enhancement among age groups.

Occupation

The "Class Surveyor" group exhibits the highest mean score at 4.4000, indicating a favourable perception of financial incentives and brand enhancement. Conversely, the "Cargo / Bunker Surveyor" group has a lower mean score of 3.6000. Overall, the total sample mean score is 4.1188. The relationship between different occupations and perceptions of financial incentives and brand enhancement was also examined. The *Between Groups* analysis indicates non-significant differences (F = 1.239, Sig. = 0.271) in these perceptions among occupation groups. The *Within Groups* variability is 28.215, and the "Total" variation is 31.775. In summary, the analysis doesn't identify statistically significant variations in perceptions of financial incentives and brand enhancement among different occupations.

Working Experience

Respondents with "16 to 20 years" of experience exhibit the highest mean score at 4.3000, indicating a favourable perception of hypothesis 6. Conversely, those with "0 to 5 years" of experience show a slightly lower mean score of 4.1429. Overall, the total sample mean score is 4.1188.

The *Between Groups* analysis reveals non-significant differences (F = 0.797, Sig. = 0.530) in these perceptions among experience groups. In summary, the analysis does not identify statistically significant variations in perceptions of financial incentives and brand enhancement among respondents with different years of working experience.

5.3.7 Hypothesis 7 Analysis Discussion

Table 26 Hypothesis 7 Discussion

Hypothesis 7 – Challenges in ESG Compliance and Investments (Refer to Table 16).	
Definition: *This hypothesis reflects challenges related to limited resources for compliance, social investments, sustainable financing, and perceived benefits (or challenges) of investing in sustainable technologies.*	
Factored Likert Survey Results:	
G.1	Shipping companies often face limited resources, thus rendering compliance to ESG a costly and unnecessary investment
G.2	There is interest amongst maritime stakeholders, to invest in sustainable technologies due to the perceived benefits
G.3	Social investments are considered crucial by shipping companies to foster a positive working environment

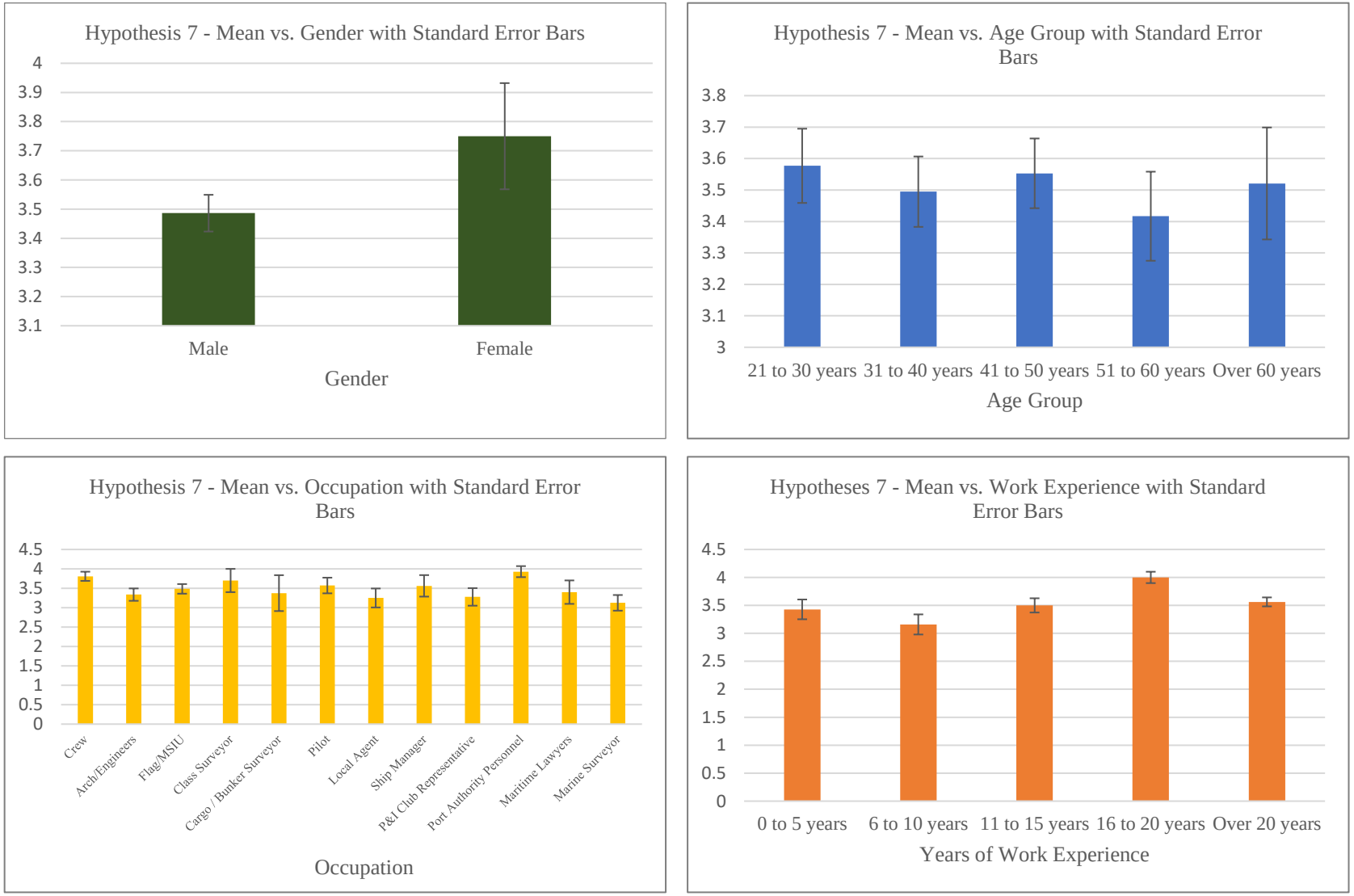

Figure 28 Hypothesis 7 Graphical Representation

Gender

Males scored a mean of 3.4861, indicating their perception of challenges in ESG compliance. On the other hand, female respondents show a slightly higher mean score of 3.7500, suggesting a relatively more pronounced perception of the challenges. The t-test statistic is -1.331, with 118 degrees of freedom and a significance level (Sig.) of 0.186. The non-significant p-value suggests that there is no statistically significant difference in perceptions of ESG compliance and investment challenges between males and females, as the confidence interval includes zero.

Age

21 to 30 years age group has the highest mean score of 3.5769, indicating their perception of these challenges. Conversely, the "31 to 40 years" age group shows a slightly lower mean score of 3.4947. Overall, the total sample mean score is 3.5125.

The *Between Groups* analysis indicates non-significant differences (F = 0.149, Sig. = 0.963) in these perceptions among age groups. The *Within Groups* variability is 50.595, and the "Total" variation is 50.856. In summary, the analysis does not identify statistically significant variations in perceptions of ESG compliance and investment challenges among different age groups.

Occupation

“Class Surveyors” have the highest mean score at 3.7000, indicating their perception of these challenges. On the other hand, “Marine Surveyors” show the lowest mean score of 3.1250. The *Between Groups* analysis reveals no significant differences (F = 1.557, Sig. = 0.122) in these perceptions among occupation groups. The variability between groups is reflected in a sum of squares of 6.962. The *Within Groups* variability is 43.894,

and the "Total" variation is 50.856. In summary, the analysis does not identify statistically significant variations in perceptions of ESG compliance and investment challenges among different occupation groups.

Working Experience

Amongst respondents with varying working experiences, respondents with “16 to 20 years” of experience have the highest mean score of 4.0000, indicating a relatively stronger perception of these challenges. On the other hand, those with "6 to 10 years" of experience show the lowest mean score at 3.1591. The ANOVA reveals a significant difference between the groups, as indicated by a p-value of .004, which is below the typical significance threshold of .05. Overall, the results suggest that the level of working experience has a notable influence on how individuals perceive challenges in ESG compliance and investments.

5.3.8 Hypothesis 8 Analysis Discussion

Table 27 Hypothesis 8 Discussion

Hypothesis 8 – Transparency and Competition (Refer to Table 17).	
Definition: *The focus of this hypothesis is on the transparency of ESG information, retrofitting costs, and the competitive advantage gained by investing in sustainable technologies.*	
Factored Likert Survey Results:	
H.1	Shipping companies tend to withhold ESG information from the public, due to concerns related to competition and confidentiality
H.2	High Ship retrofitting costs / investments to other sources of alternative fuel hinders shipping companies' sustainability efforts

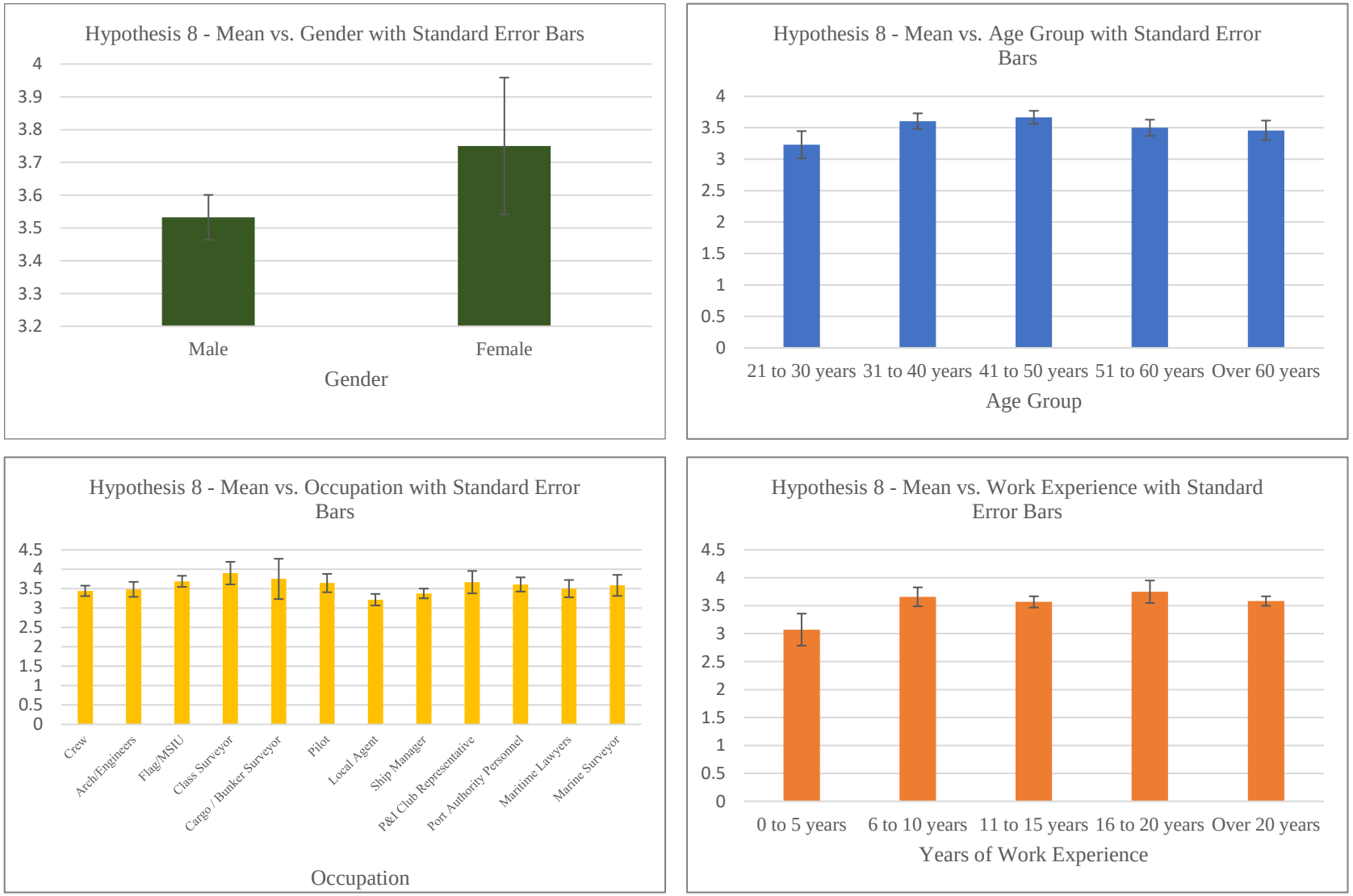

Figure 29 Hypothesis 8 Graphical Representation

Gender

Among male participants, the mean score for transparency and competition is 3.5324, with a standard deviation of 0.71130. For female participants, the mean score is 3.7500, accompanied by a standard deviation of 0.72300. The t-test aimed to determine whether the mean scores of the two gender groups significantly differ. With a t-statistic of -1.004 and a p-value of .318, there is no significant evidence to suggest a gender-based variation in perceptions of transparency and competition.

Age

Participants aged 21 to 30 years have an average score of 3.2308, with a standard deviation of 0.78037. Similarly, participants aged 31 to 40 years, 41 to 50 years, 51 to 60 years, and those over 60 years old, have mean scores of 3.6064, 3.6667, 3.5000, and 3.4583, respectively. The analysis indicates that there is a between-groups sum of squares of 2.060, with 4 degrees of freedom, resulting in a mean square of 0.515. The calculated F-statistic is 1.015. The associated p-value (Sig.) is 0.403, which is greater than the commonly used significance level of 0.05. This suggests that there is no significant difference in perceptions of transparency and competition across the age groups.

Occupation

Among the occupation groups, Master Mariner / Deck Officer / Chief Engineer / Engine Officers have a mean score of 3.4412, while Naval Architect / Marine Engineer / Mechanical Engineer group has a mean of 3.4808. The lowest mean is observed in the Ship Local Agent Representative group with a score of 3.2143. The one-way ANOVA resulted in *between-groups* sum of squares of 2.558, with 11 degrees of freedom, resulting in a mean square of 0.233 and an F-value of 0.434. The p-value associated with

the F-test is 0.937, which is not statistically significant. This suggests that there is no significant variation in perceptions of transparency and competition across the different occupation groups, as the p-value is above the typical threshold for significance (usually 0.05).

Working Experience

For those with 0 to 5 years of experience, the mean perception score is 3.0714, with a relatively high standard deviation of 1.07161, indicating greater variability in responses within this group. Similarly, respondents with 6 to 10 years of experience have a mean score of 3.6591 and a standard deviation of 0.79262. Those with 11 to 15 years of experience report a mean score of 3.5682, and a standard deviation of 0.47045. Individuals with 16 to 20 years of experience have a mean score of 3.7500, a standard deviation of 0.75320, and a confidence interval of 3.3151 to 4.1849. Lastly, respondents with over 20 years of experience show a mean score of 3.5833, a standard deviation of 0.58649, and a confidence interval of 3.4130 to 3.7536. A one-way ANOVA analysis examined the influence of different working experiences on respondents' perceptions of transparency and competition. The analysis reveals a significant F-statistic of 2.087, implying potential group differences. However, the associated p-value of .087 indicates that this finding is not statistically significant at the conventional threshold of .05.

5.3.9 Hypothesis 9 Analysis Discussion

Table 28 Hypothesis 9 Discussion

Hypothesis 9 – Regulatory Uncertainty (Refer to Table 18).	
Definition: *This hypothesis covers challenges posed by larger ships, port congestion, and its effects on operational efficiency.*	
Factored Likert Survey Results:	
I.1	The maritime sector faces significant challenges in addressing environmental risks and operational inefficiencies caused by larger ships.
I.2	Congestion and ship-queueing at ports pose significant ESG challenges in the maritime sector.

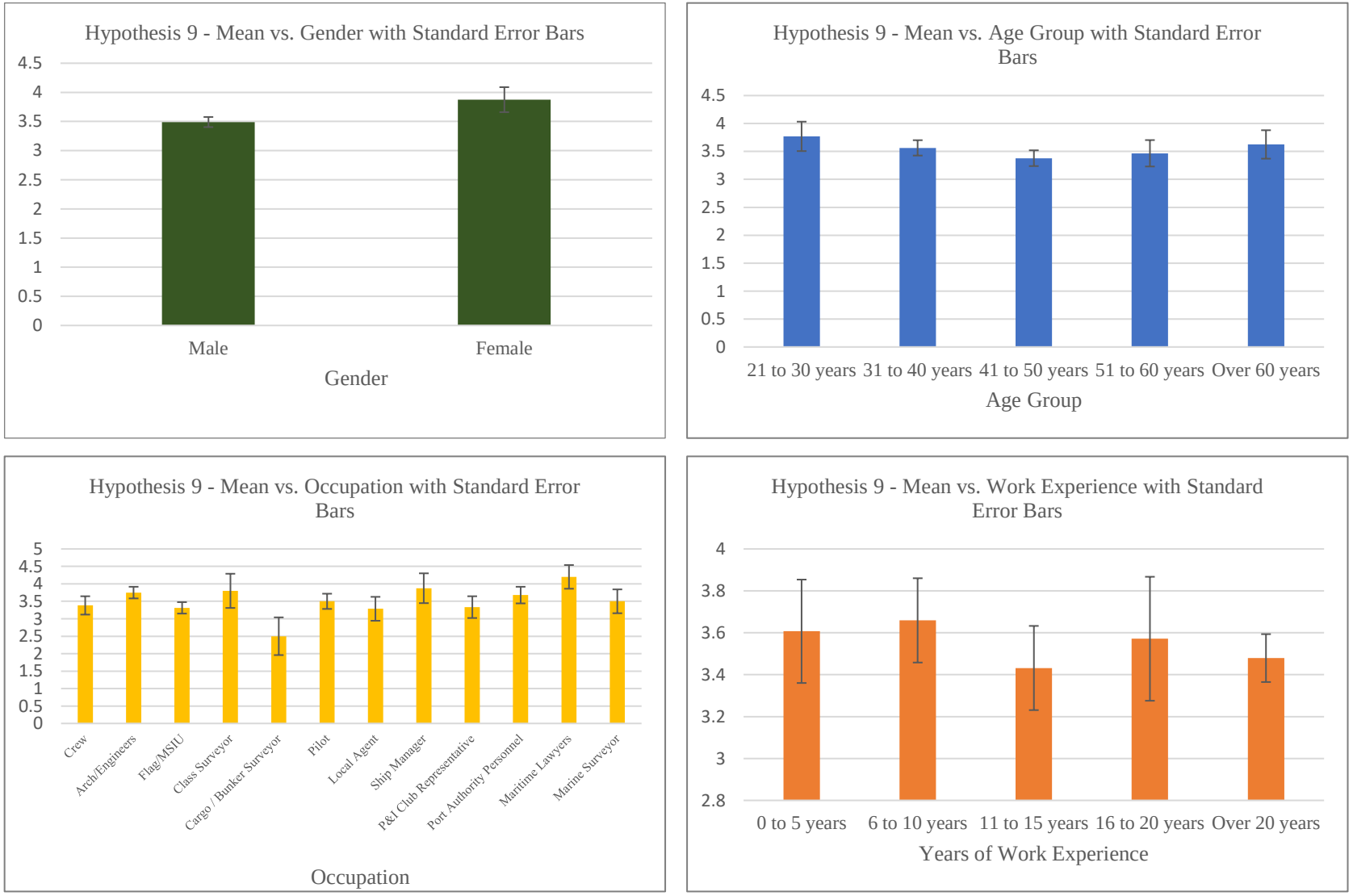

Figure 30 Hypothesis 9 Graphical Representation

Gender

Among male respondents (N=108), the mean score for operational challenges of compliance to ESG in the maritime sector is 3.4907, with a standard deviation of 0.90166. For female respondents (N=12), the mean score is slightly higher at 3.8750, with a standard deviation of 0.74239. The t-test yielded a t-value of -1.422 with 118 degrees of freedom, resulting in a p-value of 0.158. The mean difference in perceived challenges between genders is -0.38426, and the standard error of the difference is 0.27022. The 95% confidence interval for this difference ranges from -0.91936 to 0.15084. These findings suggest that the observed differences in mean scores between males and females for operational challenges are not statistically significant at the conventional significance level ($p > 0.05$).

Age

A descriptive statistical analysis of operational challenges in the maritime sector was carried out according to age groups. The data indicates the following mean scores for each group: 3.7692 for individuals aged 21 to 30 years, 3.5638 for those aged 31 to 40 years, 3.3788 for those aged 41 to 50 years, 3.4667 for those aged 51 to 60 years, and 3.6250 for individuals over 60 years. A one-way ANOVA analysis also examined operational challenges in the maritime sector across age groups. The analysis indicates a non-significant F-statistic of 0.532 with a corresponding p-value of 0.712, suggesting that there is no significant variation in operational challenges among the different age groups.

Occupation

The mean scores vary among the occupational groups, ranging from 2.5 (Cargo / Bunker Surveyor) to 4.2 (Maritime Lawyers). The table below also represents the results of a one-way ANOVA analysis for operational challenges in the maritime sector among different occupation groups. The analysis indicates that there is no statistically significant difference in the means of operational challenges between these groups, as the p-value (Sig.) is greater than the typical significance level of 0.05.

Working Experience

The descriptive statistics highlight the mean scores of operational challenges in the maritime sector among respondents with different working experiences. Among the groups, respondents with 6 to 10 years of experience have the highest mean score of 3.6591, while those with 11 to 15 years of experience have a slightly lower mean score of 3.4318. On the other hand, respondents with 0 to 5 years of experience exhibit a mean score of 3.6071, while those with over 20 years of experience have a mean score of 3.4792. The widest spread in mean scores is observed in the "16 to 20 years" group, with a mean of 3.5714 and a relatively high standard deviation of 1.10692, indicating greater variability in perceived challenges within that group. A one-way ANOVA analysis of operational challenges in the maritime sector among respondents with varying working experiences was also carried out. The analysis indicates a non-significant F-value of 0.248 with a corresponding p-value of 0.910, suggesting no significant differences in perceived challenges across different experience groups.

5.3.10 Hypothesis 10 Analysis Discussion

Table 29 Hypothesis 10 Discussion

Hypothesis 10 – Collaboration and Regulatory Compliance (Refer to Table 19).	
Definition: *This hypothesis analyses the Stakeholders' perceptions of uncertainty in regulations and the challenges of compliance amid changing legislation on decarbonization.*	
Factored Likert Survey Results:	
J.1	The uncertainty of future regulations creates challenges for shipping companies to plan for long term sustainability
J.2	Constant changes to both National and International legislation on decarbonization creates less clarity for ship owners to motivate their interests in complying to ESG

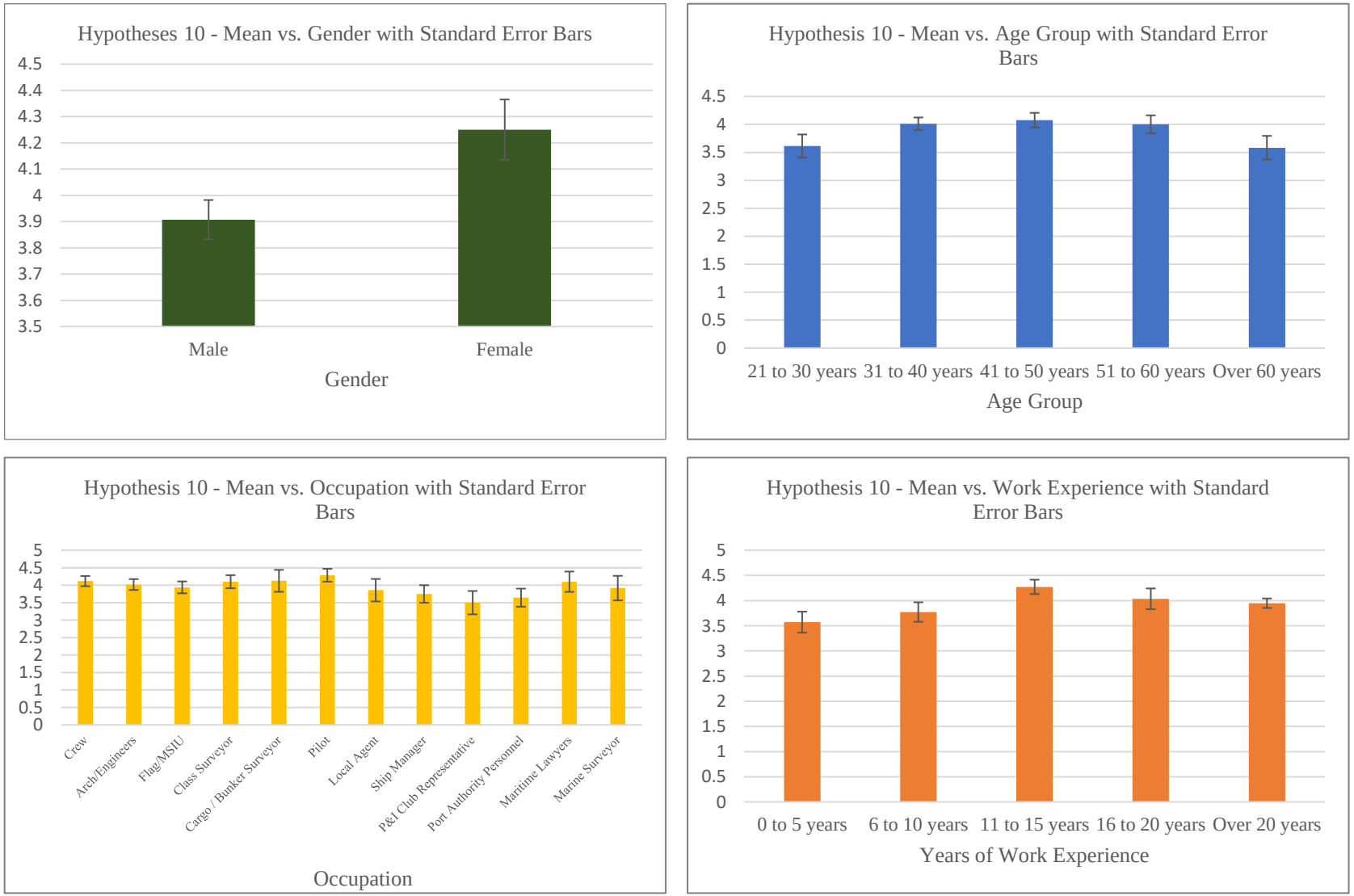

Figure 31 Hypothesis 10 Graphical Representation

Gender

A descriptive statistical analysis of regulatory uncertainty was carried out according to gender. Among males, the mean score for regulatory uncertainty is 3.9074 with a standard deviation of 0.77685. Among females, the mean score is 4.2500 with a standard deviation of 0.39886. An independent sample t-test examining gender differences in regulatory uncertainty was also undertaken. The t-test statistic is -1.502, with degrees of freedom (df) being 118. The p-value (Sig.) is 0.136, which indicates that there isn't strong evidence to conclude that the mean difference in regulatory uncertainty between genders is statistically significant.

Age

It was noticeable that the mean scores for regulatory uncertainty increase with age: individuals aged 21 to 30 have a mean of 3.6154, those aged 31 to 40 have a mean of 4.0106, those aged 41 to 50 have a mean of 4.0758, individuals aged 51 to 60 have a mean of 4.0000, and those over 60 have a mean of 3.5833. The results of a one-way ANOVA for regulatory uncertainty among age groups has also been included in the below table. The analysis explores variance between and within groups. The F-statistic of 1.709 and the associated p-value of 0.153 suggest that there isn't a statistically significant difference in mean regulatory uncertainty scores among the age groups.

Occupation

In the occupational demographic variable, Master Mariners and Deck Officers show the highest mean score of 4.1176, while Ship Managers have the lowest mean score of 3.7500. The results of the one-way ANOVA tests for regulatory uncertainty among different occupations are presented in the table below. The analysis indicates a non-

significant F-statistic of 0.802, with a corresponding p-value of 0.638. This suggests that there isn't a significant difference in the perception of regulatory uncertainty across the various occupation groups. The mean square between groups is 0.464, and the mean square within groups is 0.579. The sum of squares between groups is 5.103, while the total sum of squares is 67.592.

Working Experience

Descriptive statistics for regulatory uncertainty among respondents with different working experiences was also carried out. Notably, respondents with 11 to 15 years of working experience have the highest mean score of 4.2727, while those with 0 to 5 years of experience have the lowest mean score of 3.5714. The standard deviations range from 0.66775 to 0.90931, indicating variations in perceptions within these experience groups. The 95% confidence intervals for the means also provide insight into the likely range of values for the population mean. A one-way ANOVA test examining regulatory uncertainty among respondents with varying working experiences was also performed. The analysis reveals that there is a significant difference between the groups, as indicated by the relatively large mean square value of 1.271 and the F-statistic of 2.338. The p-value associated with the F-statistic is close to the significance threshold at 0.059, suggesting that there may be some meaningful differences between the groups' perceptions of regulatory uncertainty.

5.4 RESEARCH OBJECTIVES VALIDATION

1. *Objective 1 - Assessing the perceptions, awareness, understanding, and importance of ESG principles among maritime stakeholders in the industry;*

   The statistical analyses conducted in this research effectively addressed the first objective by providing insightful information into the perceptions and awareness of ESG principles among maritime stakeholders. The results revealed that both male and female participants demonstrated varying degrees of awareness, with females exhibiting higher awareness levels, albeit the sample size being much smaller and standard error being larger. Moreover, participants aged 41 to 60 displayed the highest mean scores, indicating stronger awareness. This indicates that older stakeholders possess a more comprehensive understanding of ESG principles.

2. *Objective 2 - Investigate demographic influences on the concept of ESG, its opportunities and challenges as seen through the eyes of stakeholders.*

   Statistical analyses delved into the demographic influences on ESG perceptions, opportunities, and challenges. The application of t-tests and ANOVA tests allowed us to determine whether significant differences existed among various demographic groups. Through this analysis, it became evident that occupation, age, and years of experience significantly influenced stakeholders' perceptions of ESG aspects. For instance, maritime lawyers and class surveyors exhibited stronger awareness, while individuals aged 51 to 60 had the highest mean scores overall. Similarly, participants with over 20 years of experience showed a higher level of knowledge. These findings not only met the second objective but also enriched our understanding of how demographics interact with ESG perceptions.

5.5 CHAPTER 5 – CONCLUSION

Within this chapter, the preliminary findings from the Results section are discussed. The analysis involves an examination of various demographic factors concerning the hypotheses presented in the Likert surveys, where participants ranked their responses. Based on the analysis, it becomes apparent that both research objectives have been successfully achieved.

6. CONCLUSION

6.1 CHAPTER 6 - INTRODUCTION

In this chapter, a synopsis of key research discoveries will be presented, along with an examination of its limitations, its impact on knowledge and society, and suggests possible future research.

6.2 RESEARCH FINDINGS

This research sought to examine the perceptions, awareness, and significance of ESG principles among maritime stakeholders. Through descriptive statistics, t-test and ANOVA testing, the influence of demographic variables on ESG perceptions was thoroughly explored and derived. The outcomes contribute to a comprehensive understanding of ESG dynamics within the maritime sector and its journey towards attaining sustainability.

Firstly, the varying degrees of familiarity with the ESG concept (A.1) and awareness of the new Corporate Sustainability Reporting Directive (CSRD) Requirements (A.8) reflect the ongoing discussion in the literature regarding the need for greater awareness and understanding of ESG principles in the maritime sector. Respondents' differing levels of familiarity with the concept mirror the sector's ongoing journey toward ESG integration, as also documented in the literature.

Secondly, the perception of ESG as a potentially costly investment (G.1) resonates with discussions in the literature about the financial considerations and resource limitations faced by shipping companies in their sustainability efforts.

Thirdly, the survey findings offer valuable insights into how challenges and opportunities are perceived among different stakeholders within the maritime industry. The recognition of social investments as crucial to fostering a positive working environment (G.3) aligns with discussions in the literature about the importance of the social dimension of ESG in the maritime sector.

Additionally, the findings regarding sustainability benefits (D) align with existing research, confirming that sustainability initiatives can boost customer engagement (D.1) and productivity (D.2), as well as reduce energy costs and waste consumption (D.3). These findings resonate with discussions in the literature about the operational and financial advantages of sustainability.

Incorporating these survey responses into triangulation with the literature review, further confirms the understanding of how the maritime industry navigates the complex landscape of ESG principles, highlighting both the sector's progress and ongoing challenges in pursuit of sustainability.

6.3 RESEARCH LIMITATIONS

Given the limited number of participants that engaged in this study, which ultimately stems from the restricted nature of the industry itself, the inclusion of a greater number of participants would have enhanced the statistical robustness of the research by understanding underlying factors amongst different demographics, as a larger sample size could have facilitated the execution of factor analysis. This, in turn, might have assisted in pinpointing underlying factors influencing stakeholders' perceptions of ESG, thereby simplifying the analytical process, refining interpretation, and retaining only the essential insights from the dataset.

Furthermore, the study was constrained to quantitative analysis, precluding the incorporation of open-ended interpretations. While these characteristic holds both advantageous and disadvantageous aspects, the primary aim of the research was to guarantee uniformity across all responses.

A potential area for enhancement in future studies involves achieving more balanced sample sizes across various demographic variables such as gender, age groups, occupation, and years of experience within the sector. As notably, observed within the occupation category, several specific occupations had a very limited representation such as Class Surveyors and Maritime Lawyers even though efforts had been made to balance participation amongst occupational groups. Consequently, in addition to increasing the overall sample size to surpass the basic requirement for 385 participants to take part, it is advisable to ensure comparable participant numbers for each occupation. This

approach would foster consistency in the analysis, leading to enhanced accuracy in research outcomes and the ability to identify any potential anomalies within the process.

6.4 RESEARCH CONTRIBUTIONS AND IMPLICATIONS OF THE FINDINGS

This study yields significant contributions and far-reaching implications for both the maritime industry and the broader realm of sustainability research. By comprehensively evaluating maritime stakeholders' perceptions, awareness, and understanding of ESG principles, this research provides significant perceptions into the current state of ESG integration within the maritime sector. The exploration of demographic influences on ESG perspectives highlights the potential variations in perception across different segments of stakeholders, offering a rich understanding of how gender, age, occupation, and years of experience might shape these perspectives. These discoveries enhance the current knowledge base by providing empirical evidence regarding the current ESG perspective in the industry and uncovering potential demographic trends that impact ESG engagement.

In practical terms, the research outcomes have significant implications for maritime stakeholders, industry practitioners, policymakers, and sustainability advocates. The insights gained from stakeholders' perceptions provide a foundation for decision-makers to adapt their strategies to better align with the awareness and preferences of those involved in the maritime sector. Moreover, demographic influences highlight the importance of targeted educational initiatives and communication strategies to enhance ESG awareness among specific stakeholder groups. As the maritime industry faces

increasing global attention on sustainability and regulatory changes, the research findings offer timely guidance for aligning strategies, policies, and initiatives with the varying perspectives of different stakeholders. Overall, this study's contributions pave way for informed decision-making and collaborative efforts toward achieving a more sustainable and responsible maritime industry.

6.5 POSSIBLE FUTURE RESEARCH

Whilst utilising Likert Scale Surveys is still considered an effective technique of data collection, qualitative research within different demographic variables should also be investigated. Having both quantitative and qualitative data may very well offer supplementary and intriguing results on the perceptions of stakeholders in the concept of ESG.

It should also be noted that this research was carried out prior to the enforcement of the EU regulation on ESG reporting. Given the impending implementation of the EU's CSRD, it is likely that more companies will be mandated to adhere to these regulations. Consequently, there might be a requirement to revisit this study, considering the increased awareness among stakeholders that is anticipated with the introduction of regulatory measures. It is plausible that perceptions could undergo changes once obligatory regulations are enacted, potentially leading to a diminished impact of the concept compared to its voluntary adoption by companies.

6.6 CHAPTER 6 - CONCLUSION

In conclusion, this research has explored the perceptions, awareness, and implications of ESG principles among maritime stakeholders. Through a comprehensive analysis of stakeholder views and demographic influences, valuable insights have been gained into how gender, age, occupation, and experience shape perceptions of ESG. The study underscores the significance of considering demographic variables in understanding stakeholders' perspectives on sustainability and responsible practices in the maritime sector. As maritime businesses increasingly navigate the evolving landscape of ESG regulations, it becomes imperative to comprehend the influences that contribute to these perceptions.

Looking ahead, future researchers are encouraged to delve further into the dynamic relationship between demographic variables and ESG perceptions. As ESG principles continue to evolve and gain prominence, deeper exploration is needed to understand how demographic factors may shift over time, and whether emerging regulations drive changes in stakeholder perspectives. An open-ended question emerges: How will the interaction between demographics and ESG perceptions transform in the face of evolving regulations, societal shifts, and industry dynamics? Future studies can contribute to a deeper understanding of sustainable practices within the maritime sector and offer insights that guide the industry toward a more responsible and resilient future.

14,314 words excluding tables, figures, and references

7. REFERENCES

Action, D.-G. f. (2022). EU Emissions Trading Systems (EU ETS). Brussels, Belgium.

Adams, C. (2021). *The Double-Materiality Concept - Application and Issues.* Amsterdam: Global Reporting Initiative.

Barbier, B. (2017). The Sustainable Development Goals and the Systems Approach to Sustainability. *Economics E Journal*, Vol. 11, pp 1-28.

Byrne, B. (2001). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. . *Journal of Marketing Research*, Vol 18(3), pp. 382 - 388.

Carroll, P. (2022). *Suicide and Seafarers.* United Kingdom: Department for Transport.

Change, U. N. (2016). *United Nations*. Retrieved from The Paris Agreement: https://unfccc.int/process-and-meetings/the-paris-agreement?gclid=CjwKCAjwqZSlBhBwEiwAfoZUIG_ZKqPoBX9lbliaFIMLjenl4am2cBBFMF7Y9lZGyG0OuO9kHHzLIBoCYzsQAvD_BwE

Commission, E. (2023). *Corporate Sustainability Reporting*. Retrieved from Official Website of the European Commission: https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

Damyanova, V. (2020, January 27). 'Hydra' of ESG is barrier to private investments in shipping, investor says. *The SNL Insurance Daily*, pp. pp. 1-2.

Deloitte. (2021). *ESG in the Shiping Sector - The role of ESG in the Evaluation of Shipping Companies.* Greece: Deloitte Certified Public Accountants Societe Anonyme.

Deuteronomy. (n.d.). *20:19-20.*

Development, O. f.-o. (2022). *OECD*. Retrieved from Ocean Shipping and Shipbuilding: https://www.oecd.org/ocean/topics/ocean-shipping/

DNV. (2023). *DNV*. Retrieved from Green FInance - Raising money for decarbonization with freen, sustainability-linked and transition loans and bonds.: https://www.dnv.com/maritime/hub/decarbonize-shipping/key-drivers/investors-and-finance/green-finance.html

Dolan, C. (2021). *Transparency in ESG and the Circular Economy.* New York: Business Expert Press Economics and PUblic Policy Collection.

Esty, D. (2020). *Values at Work - Sustainable Investing and ESG Reporting.* New Haven, USA: Palgrave Macmillan.

Exodus. (n.d.). *18:21.*

Fisk, G. (2022, March). The Financial Impact of Climate DIsclosures. *Editorial - Sea Technology*, p. pp. 7.

Fornell, C. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, Vol 18(3) pp. 382-388.

GRI. (2023). *Global Reporting Initiative*. Retrieved from About GRI: https://www.globalreporting.org/about-gri/

Gritsenko, D. (2015). Quality Governance in Maritime Oil Transportation: the case of the Baltic Sea. *Management of ENvironmental Quality: An International Journal*, Vol. 26 No.5 pp 701-720.

Guddal, C. (2022, November 2). *Focus on seafarer wellbeing – a reflection on the "S" in "ESG"*. Retrieved from Gard: https://www.gard.no/web/articles?documentId=34430053

Hair, J. (2019). *Multivariate Data Analysis.* Cengage.

Hartley, J. E. (1992). *Leviticus.* Texas, US: Nelson Reference & Electronic.

Hobbs, D. (2021, July 16). *Deloitte*. Retrieved from Why CFOs should consider focusing on ESG for competitive advantage.: https://www2.deloitte.com/xe/en/insights/topics/strategy/cfo-benefits-esg-investment.html

Holmes-Smith. (2002). *Applied Structural Equation Modelling.* Canberra.

ILO. (2006). *The ILO Maritime Labour Convention, 2006. 4th Edition.* International Chamber of Shipping.

Iyer, A. (2022, May 10). *How ESG affects shipping: Key challenges*. Retrieved from Safety4Sea: https://safety4sea.com/cm-how-esg-affects-shipping-key-challenges/

J. Wu, V. J. (2020, May 12th). *COVID-19 shows ESG matters more than ever*. Retrieved from J.P Morgan - Asset Management: https://am.jpmorgan.com/sg/en/asset-management/per/insights/market-insights/on-the-minds-of-investors/covid-19-esg-matters/

Jeongmin, L. (2023). Identifying ESG Trends of International Container Shipping Companies Using Semantic Network Analysis and Multiple Case Theory. *Sustainaility 2023*, pp. 1-20.

Joltreau, E. (2019). Why does emissions trading under the EU Emissions Trading System (ETS) not affect firms' competitiveness? Empirical findings from the literature. *Climate Policy*, Vol.19, Iss.4, pp.453-471.

Kiehne, D. (June 2019). *Environmental, social and corporate governance (ESG) - also an innovation driver?* Germany: Intracom Group.

Koillo, V. (2019). Sustainability issues in maritime transport and main challenges of the shipping industry. *Environmental Economics*, 10(1) pp. 48-65.

Lee, J. (March 2023). Identifying ESG Trends of International Container Shipping Companies Using Semantic Network Analysis and Multiple Case Theory. *Sustainability*, Vol 15. pp. 1-20.

Leviticus. (n.d.). *25:35-37.*

Loche, C. (2012). From Preaching to Investing Attitudes of Religious Organisations towards Responsible Investment. *Journal of Business Ethics*, 110(3).

Lykkesfeldt, P. (2022). *Investor Relations and ESG Reporting in a Regulatory Perspective.* Cham, Switzerland: Palgrave Macmillan.

M. Agudelo, L. J. (2019). A Literatire Review of the History and Evolution of Corporate Social Responsibility. *International Journal of Corporate Social Responsibility*, pp. 1-23.

Marwitz, C. (2022). ESG Challenges: Talent shortage and lack of consistent standards. *ALM Media*, pp. 1.

McTavish, L. (2020, January 12). *ESG: being a resopnsible investor is no longer limited to excluding stocks*. Retrieved from DNB: https://dnbam.com/se/finance-blog/esg-we-have-come-a-long-way-since-the-first-exclusions-of-sin-stocks

News, S. G. (2020). Maritime technology startups to get S$50 million in co-investments through SEEDS Capital and six appointed partners . *Athena Information SOlutions Ltd.*, pp. 1-2.

Olmedo, E. (2013). Sustainable Development and the Financial System: Society's Perceptions About Socially Responsible Investing. *Business Strategy and the Environment*, Vol.22 (6), pp. 410-428.

Organisation, I. M. (2019). *List of IMO Conventions*. Retrieved from IMO: https://www.imo.org/en/about/Conventions/Pages/ListOfConventions.aspx

Palmejar, E. (2022, August). *How are emerging technologies supporting the adoption of ESG in maritime?* Retrieved from Thetius: https://thetius.com/how-are-emerging-technologies-supporting-the-adoption-of-esg-in-maritime/

Pangalos, G. (January 2023). Financing for a Sustainable Dry Bulk Shipping Industry: What Are the Potential Routes for Financial Innovation in Sustainability and Alternative Energy in the Dry Bulk Shipping Industry? *Risk and Financial Management*, Vol 16. pp 101 - 113.

Perez, L. (August, 2022). Does ESG really matter - and why? *McKinsey Quarterly*, pp. 1-9.

Pielichata, P. (2019). Disclosure requirement approved by EU: asset owners, managers must detail ESG impact on investments. *Pensions and Investments; Chicago*, pp 1-4.

Principles, P. (2023). *Poseidon Princples*. Retrieved from Princples Overview: https://www.poseidonprinciples.org/finance/principles/

PWC. (2022, November 29). *EFRAG submits draft European Sustainability Reporting Standards to the European Commission*. Retrieved from PWC: https://viewpoint.pwc.com/dt/gx/en/pwc/in_briefs/in_briefs_INT/in_briefs_INT/efrag-submits-draft-european.html

Register, L. (2022). *The Rise of ESG in Maritime*. Retrieved from Putting the 'S' into ESG in maritime: https://horizons.lr.org/october-2022/putting-the-s-into-esg-in-maritime

Ring, S. (2022, November 29). Banks need technology to turn green trade finance into growth opportunity. *Compliance Trade finance Sanctions Shipping industry*, pp. pp. 1-2.

Saunders, M. (2012). *Research Methods for Business Students.* Surrey: Pearson Higher Ed.

Sigrun, A. (2018). Research Techniques made Simple: Sample Size Estimation and Power Calculation. *Journal of Investigative Dematology*, Vol. 138 pp. 1678 to 1682.

Skaug, H. (July 2021). A framework for evaluating and disclosing the ESG related impacts of AI with the SDGs. *Sustainability*, pp, 1-16.

Solberg, H. (February 2020). *Guidelines - ESG Reporting in the Shipping and Offshore Industries.* Norway: The Governance Group.

Spirito, L. (2023, March 6th). *EU Publishes Corporate Sustainability Reporting Directive (CSRD)*. Retrieved from SGS: https://www.sgs.com/en/news/2023/03/safeguards-3423-eu-publishes-corporate-sustainability-reporting-directive

Stephens, A. (2021, January 14th). *Financial Stakeholders are Key to Shipping's Green Transition*. Retrieved from Nordea: https://www.nordea.com/en/news/financial-stakeholders-are-key-to-shippings-green-transition

Tadahiro, N. (2021). *ESG Investment in the Global Economy.* Singapore: Springer.

UN. (2023, January 12). *United Nations*. Retrieved from Sustainable Development Goals: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

UNCTAD. (2022). *Handbook of Statistics 2022 - Merchant Fleet.* Switzerland: UNCTAD.

Vediakova, T. (2022, July 24th). *Ocean Carriers Facing Increased ESG Risk Amidst Supply Chain Crisis*. Retrieved from Sustainalytics: https://www.sustainalytics.com/esg-research/resource/investors-esg-blog/ocean-carriers-facing-increased-esg-risk-amidst-supply-chain-crisis

Wang, X. (2020). How can the maritime industry meet Sustainable Development Goals? An analysis of sustainability reports from the social entrepreneurship

perspective. *Transportation Research Part D: Transport and Environment*, Vol.78, 102173.

Watkins, L. &. (27 January 2023). *The EU Corporate Sustainablity Reporting Directive - How Companies Need to Prepare.* United States: Client Alert Commentary.

Xiumei, L. (2020). Debt Financing Cost Evaluation Method of Shipping Enterprises. *Journal of Coastal Research SI 103*, 744-748.

Yusheng, Z. (2023). Sustainable shipping: A critical review for a unified framework and future research agenda. *Marine Policy (148)*, pp. 1 - 15.

ANNEX I - PRISMA ANALYSIS

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
1	Maritime Policy Design Framework with ESG Performance Approach: Case of Estonia	No	Awareness and Understanding of ESG	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_doaj_primary_oai_doaj_org_article_a68072cdfdb04a6e9826dd84a07cd57a&context=PC&vid=356MALT_VU1&lang=en_US&tab=default_tab&query=any,contains,esg%20maritime&offset=0	No
2	ESG adds to marine capabilities	No	Awareness and Understanding of ESG	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_reports_925814052&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=0	No
3	Identifying ESG Trends of International Container Shipping Companies Using Semantic Network Analysis and Multiple Case Theory	No	Awareness and Understanding of ESG	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_journals_2829881568&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=0	Yes
4	Marine to Command ESG	No	Awareness and Understanding of ESG	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_reports_221515251&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=0	No

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
5	Banks need technology to turn green trade finance into a growth opportunity-Simon Ring, Global Head of Maritime Trade Technologies & ESG, Pole Star	No	Implications and Benefits of ESG for Maritime Stakeholders	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_wirefeeds_2697057731&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=0	Yes
6	Development of the Northern Sea Route based on ESG principles	No	Opportunities and Innovations for ESG in the Maritime Industry	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_doaj_primary_oai_doaj_org_article_f5c9f3019cba4b94a561212c614c089a&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=0	no
7	Well-to-tank carbon emissions from crude oil maritime transportation	No	Miscellaneous	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_crossref_primary_10_1016_j_trd_2020_102587&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=10	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
8	Incorporated Maritime Policy Concept: Adopting ESRS Principles to Support Maritime Sector's Sustainable Growth	No	Implications and Benefits of ESG for Maritime Stakeholders	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_doaj_primary_oai_doaj_org_article_7e6528e8341441aeb52a0c88718a8f90&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=10	Yes
9	Financing for a Sustainable Dry Bulk Shipping Industry: What Are the Potential Routes for Financial Innovation in Sustainability and Alternative Energy in the Dry Bulk Shipping Industry?	No	Opportunities and Innovations for ESG in the Maritime Industry	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_doaj_primary_oai_doaj_org_article_08c9375994fc4750b6804d5826aee65c&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=20	Yes
10	'Hydra' of ESG is barrier to private investments in shipping, investor says	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_reports_2347064930&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20marine&offset=20	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
11	Could ESG accountability advance the maritime performance management and address UN Sustainable Development Goals (SDGs)?	No	Awareness and Understanding of ESG	https://www.researchgate.net/publication/342500064_Could_ESG_accountability_advance_the_maritime_performance_management_and_address_UN_Sustainable_Development_Goals_SDGs	Yes
12	Focus on seafarer wellbeing – a reflection on the “S” in “ESG”	No	Implications and Benefits of ESG for Maritime Stakeholders	https://www.gard.no/web/articles?documentId=34430053	Yes
13	How ESG affects shipping: Key challenges	No	Awareness and Understanding of ESG	https://safety4sea.com/cm-how-esg-affects-shipping-key-challenges/	Yes
14	How ESG supports shipping in unleashing its dynamics	No	Awareness and Understanding of ESG	https://safety4sea.com/cm-how-esg-supports-shipping-in-unleashing-its-dynamics/	Yes
15	Sustainability Reporting in the Maritime Container Shipping Industry	No	ESG Reporting and Transparency in the Maritime Sector	https://www.academia.edu/5739443/Sustainability_Reporting_in_the_Maritime_Container_Shipping_Industry	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
16	Human Rights at Sea: ESG gloss or a critical business requirement?	No	Awareness and Understanding of ESG	https://www.cii.co.uk/learning/insurance-institute-of-london/articles/human-rights-at-sea-esg-gloss-or-a-critical-business-requirement/105468	Yes
17	Sustainable shipping: A critical review for a unified framework and future research agenda	No	Opportunities and Innovations for ESG in the Maritime Industry	https://www.sciencedirect.com/science/article/abs/pii/S0308597X23000052	Yes
18	Sustainability issues in maritime transport and main challenges of the shipping industry	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://www.businessperspectives.org/index.php/journals/environmental-economics/issue-312/sustainability-issues-in-maritime-transport-and-main-challenges-of-the-shipping-industry	Yes
19	Is there a need to incorporate ESG standards in response to maritime emergencies?	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://marittima.co.uk/articles/formally-incorporate-esg-standards-response-maritime-emergencies	No
20	Can shipping capitalise on the green finance surge?	No	Opportunities and Innovations for ESG in the Maritime Industry	https://www.ics-shipping.org/news-item/can-shipping-capitalise-on-the-green-finance-surge/	Yes
21	Green shipping: a $1.9tn investment opportunity?	No	Opportunities and Innovations for ESG in the Maritime Industry	https://www.schroders.com/en-us/us/institutional/insights/green-shipping-a-1-9tn-investment-opportunity/	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
22	Ocean carriers facing increased ESG risk amidst Supply Chain Crisis	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://www.sustainalytics.com/esg-research/resource/investors-esg-blog/ocean-carriers-facing-increased-esg-risk-amidst-supply-chain-crisis	No
23	Financial stakeholders are key to shipping's green transition	No	Opportunities and Innovations for ESG in the Maritime Industry	https://www.nordea.com/en/news/financial-stakeholders-are-key-to-shippings-green-transition	Yes
24	Singapore: Joint Release by ESG and MPA: Maritime technology startups to get S$50 million in co-investments through SEEDS Capital and six appointed partners	No	Opportunities and Innovations for ESG in the Maritime Industry	https://www.proquest.com/docview/2417448754/4B9A32A5A12B4A47PQ/8?accountid=27934	No
25	The Financial Impact Of Climate Disclosures	No	Awareness and Understanding of ESG	https://www.proquest.com/docview/2642563450/4B9A32A5A12B4A47PQ/18?accountid=27934	Yes
26	Over S$100m in extra funding for agriculture, maritime startups: Enterprise	No	Opportunities and Innovations for ESG in the Maritime Industry	https://www.proquest.com/docview/2417781240/4B9A32A5A12B4A47PQ/20?accountid=27934	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
	Singapore says it is working with accelerators and partners to boost the 2 sectors				
27	How are emerging technologies supporting the adoption of ESG in maritime?	No	Opportunities and Innovations for ESG in the Maritime Industry	https://thetius.com/how-are-emerging-technologies-supporting-the-adoption-of-esg-in-maritime/	Yes
28	Transparency in ESG and the Circular Economy: Capturing Opportunities Through Data	No	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=356MALT_alma51118913320003956&context=L&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=Local%20Search%20Engine&tab=default_tab&query=any,contains,esg&offset=0	Yes
29	The wages of social responsibility - where are they? A critical review of ESG investing	No	Awareness and Understanding of ESG	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_journals_1702110964&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg&offset=40	Yes
30	ESG in the Shipping Sector. The role of ESG in the evaluation of shipping companies	No	Awareness and Understanding of ESG	https://www2.deloitte.com/content/dam/Deloitte/gr/Documents/consumer-business/gr_esg_in_the_shipping_sector_noexp.pdf	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
31	The Costly Future of Green Shipping	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://mybrand.schroders.com/m/ed701d9d2d851865/original/The-costly-future-of-green-shipping-Schroders.pdf	Yes
32	Guidelines - ESG reporting in the shipping and offshore industries	No	ESG Reporting and Transparency in the Maritime Sector	https://www.rederi.no/globalassets/dokumenter/alle/rapporter/2020-guidelines-esg-reporting-.pdf	Yes
33	The pathway to green shipping	No	Opportunities and Innovations for ESG in the Maritime Industry	https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2021/03/the-pathway-to-green-shipping.pdf	Yes
34	The importance of Environmental, Social and Governance (ESG) performance in accessing shipping finance - Insights from PwC Greece on the key steps for the shipping industry to start preparing for the future	No	Implications and Benefits of ESG for Maritime Stakeholders	https://www.pwc.com/gr/en/press-releases/assets/The%20increasing%20importance%20of%20ESG%20factors%20in%20shipping%20financing_%CE%95%CE%9D.pdf	Yes
35	How do companies respond to environmental, social and governance ratings? Evidence from Italy	No	Awareness and Understanding of ESG	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_gale_infotracacademiconefile_A659522311&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg&offset=0	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
36	International variations in ESG disclosure - Do cross-listed companues care more?	No	ESG Reporting and Transparency in the Maritime Sector	https://www.sciencedirect.com/science/article/abs/pii/S1057521921000740	Yes
37	Appearance or substance of Stewardship and ESG reporting? The challenges of translating 'commitment' into tangible outcomes	No	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_emerald_primary_10_1108_SAMPJ-03-2021-0091&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes
38	The imapacts and challenges of ESG investing	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_doaj_primary_oai_doaj_org_article_33a215f6d7ab4d769868f694346cf486&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes
39	ESG standards: Looming Challenges and Pathways Forward	No	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_sage_journals_10_1177_1086026620945342&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
40	ESG challenges: talent shortage and lack of consistent standards	No	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_reports_2621399250&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes
41	Introducing the ESG reporting - benefits and challenges	Yes	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_doaj_primary_oai_doaj_org_article_06b4530b7efd41248eceb1c9dd25774c&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes
42	ESG reporting: Challenges as well as opportunities	No	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_proquest_reports_2684730325&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes
43	Corporate Governance challenges in relation to the ESG reporting	No	ESG Reporting and Transparency in the Maritime Sector	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=TN_cdi_hrcak_primary_oai_hrcak_srce_hr_293341&context=PC&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=primo_central_multiple_fe&tab=default_tab&query=any,contains,esg%20challenges	Yes
44	Financing sustsainable development key challenges and prospects	No	Challenges and Barriers to ESG Compliance in the Maritime Industry	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=356MALT_alma5181399290003956&context=L&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=Local%20Search%20Engine&tab=default_tab&query=any,contains,esg%20challenges&offset=50	Yes

No.	Identified Records Through Database Searching	Duplication	Theme	Hyperlink	Required
45	A guide to sustainable corporate repsonsibility: from theory to action	No	Miscellaneous	https://hydi.um.edu.mt/primo-explore/fulldisplay?docid=356MALT_alma51117032440003956&context=L&vid=356MALT_VU1&lang=en_US&search_scope=all&adaptor=Local%20Search%20Engine&tab=default_tab&query=any,contains,esg%20challenges&offset=50	Yes
46	SASB Marine Transportation Sustainability Accounting Standard	No	ESG Reporting and Transparency in the Maritime Sector	https://sasb.org/standards/download/	No

ANNEX II –LIKERT SURVEY RESULTS – SECTION A

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	3	2	2	2	3	5	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	1	2	4	3	1	1	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	3	4	3	4	4	1
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	3	4	4	4	4	3	1	1
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	1	1	2	1	1	2	2
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	3	2	3	3	2	1	1
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	2	3	1	3	1	2	1	1
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	4	4	1	1	3	3	3	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4	3	2	3	5	4	2
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	2	4	5	3	3	4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	3	1	1	4	2	2	2
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	2	3	2	1	3	2	2	1
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	3	1	1	1	1	2	2	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	4	1	1	3	1	1	3
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	5	4	5	5	5	2

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	3	3	3	3	4	4	4	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	2	3	2	3	3	2	2	2
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	4	4	3	4	5
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	4	3	1	1	3	3	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	1	3	3	1	1	3	3	1
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	3	1	3	2	4	1	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	3	3	3	4	3	3	3
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	5	5	2	3	5	5	5	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4	4	4	4	4	3
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	5	5	1	2	5	5	3	5
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	5	5	5	3	5	3	3
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	3	4	2	2	1	4	1	1
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3	2	2	3	4	2	2
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	5	5	5	4	5	5	2	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	3	3	2	3	2	2	2	1
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	1	1	5	3	1	2
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	4	4	2	2	3	3	2	2

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	1	1	1	1	1	1	1	1
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	1	1	1	1	1	1	1	1
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	2	1	3	3	4	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	3	2	1	2	2	5	1
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	3	3	3	5	3	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	3	2	4	3	3	3	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	5	4	3	1	5	4	3	1
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	2	2	3	2	2	2
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	4	2	2	4	4	3	3
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	5	5	1	4	2	3	4	3
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	5	3	1	3	2	2	1	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	2	2	2	2	1	1	1
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	3	3	3	4	3	3
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	5	5	5	5	5	5	3	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	4	3	3	4	3	4	3
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	4	2	2	4	4	2	1
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	3	2	3	4	3	3	3
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	3	3	3	3	3	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	3	2	3	2	2	2	2
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	4	4	4	2	4	4	2
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	4	4	4	1	3	3	1
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	5	5	1	1	5	4	5	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	3	1	1	1	1	1	3	1
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	4	4	4	5	2	4	4	3
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	4	5	4	5	4	5	5	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	3	1	3	3	4	2	1
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	2	2	2	4	1	1	2	1
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	4	3	3	2	3	1	1
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	2	2	2	2	2	2	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	1	1	2	1	2	1	1
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	2	2	3	2	1	1
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	4	4	3	3	3	2	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	1	2	1	1	2	2	1	2
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	2	1	1	1	2	2	1
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	2	1	1	1	1	1	1	1
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	1	3	1	1	1	2	2	2

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	3	1	2	3	1	2	4
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	3	2	3	2	3	3	2
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	5	4	1	2	4	4	2	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	3		2	3	1	2	2
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4	3	5	5	5	3
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	4	3	3	3	2	1	1	1
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	2	2	3	2	4	3
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	3	3	2	2	3	3	3	3
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	5	2	1	1	2	3	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	3	1	1	3	1	3	2
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	3	3	4	2	3	3	2
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	1	2	3	1	1	1	1
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	3	5	5	5	3	5	5	1
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	4	1	1	1	1	1	1	1
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	2	2	1	1	2	1	1	1
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	5	1		5	5	4	4
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	5	4	3	4	4	3	2	1
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	3	4	4	3	4	3	2

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	3	5	5	4	1	4	4	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	3	3	2	4	3	2	5	3
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	3	3	3	1	3	1	4
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	5	5	5	5	5	3	3	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	2	1	1	5	4	1	4
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	3	3	3	4	3	4	4	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	5	4	2	2	4	3	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	2	1	4	1	1	2	1
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4	1	3	2	4	4	2
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	2	2	2	3	2	3	2	2
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	3	4	3	4	4	4	3	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	1	1	4	3	3	2
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	3	3	2	2	4	3	2	2
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	5	2	2	4	4	4	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	3	2	2	2	2	2	1
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	3	3	5	1	3	3	1
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	5	4	4	5	5	4	3	4
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	2	1	1	1	1	1	1	1

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	A.1	A.2	A.3	A.4	A.5	A.6	A.7	A.8
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	3	1	1	2	1	2	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	1	1	1	1	1	1	1	1
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	5	5	5	5	5	5	5	5
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	4	4	4	4	5	1	3
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	4	3	3	4	4	4	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	3	3	4	3	3	3	2
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	5	3	5	2	4	2	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	1	1	1	1	1	1	1
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	3	1	2	2	2	1	1
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	3	1	1	1	1	1	3	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	1	2	1	1	2	1	1	1
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	2	1	2	3	1	2	1
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	2	5	3	1	4	1	1
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	3	3	3	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	1	1	1	1	1	1	1
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	5	2	5	5	5	1	5

ANNEX III –LIKERT SURVEY RESULTS – SECTION B

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	4	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	4	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	4	4
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	3	4	4	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	4	4	3
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	3	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	5	5	4	4
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	4	3	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	4	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	4	4	4	4
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	4	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	5	4
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	5	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	4	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	4	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	5	4	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	4	4	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	3	4	4
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	2	2	3	2
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	4	5	4
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	5	5	5	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	3	4	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4	3	3
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	5	5	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	5	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	5	5	5	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	2	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	4	5	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	3
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	4	4	3
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	5	5	5	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	5	3	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	3	4	5	3
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	4	3	4	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5	4
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	5	4	4	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	3	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	3	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	4	4	4
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	5	4	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	5	5	3	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	4	4	5	4
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	5	5	5	4
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	3	4	4	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	4	4	5	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	5	5	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4	4
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	5	5	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4	4	4
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	4	4	4	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	5	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	5	4
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	2	3	5	3
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	5	5	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	4	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	5
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	4	4	4	3
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	4	4	4	5
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	5	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	5	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	4	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	2	2	2	2
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	4	5	4	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	2	2	2	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	4	3	3
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	4	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	4	4	4	4
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	3	3	3	3
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	5	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	5	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	4
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20		4	5	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	5	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	4	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	3	4	4	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4	4	3
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	4	5	4	2
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	5	5	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	4	4
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	3	3	3
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	4	4	4	3
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	5	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	B1	B2	B3	B4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	3	4	5
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	5	5	5	5
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	5	5	5	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	5	4	3
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	4	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4	4
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	5	5	4
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	5	4	4	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	4	3
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5	5	5
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	5	5	5

ANNEX IV –LIKERT SURVEY RESULTS – SECTION C

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	3	3	2	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	1	1	5	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	3	3	4	4	4
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	5	5	5	3	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	2	2	1	2	2
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	2	3	3	4	5	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	5	2	4	3	5	4
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	3	5	2	2	2	2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	3	4	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	3	5	3	5	5
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	3	4	3	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	4	5	4	2	2	4
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	3	3	3	3	2	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	3	3	5	5	5
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	3	3	4	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	4	4	4	5	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	2	3	2	2	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	5	5	4
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	4	4	3	4	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	3	1	1	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	2	3	2	2	1
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	5	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	3	4	4	3	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4	4	4	5
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	3	3	3	4	4	4
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	3	3	3	4	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	3	3	5	3	3
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	4	3	3	3	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	2	3	3	2	4	5
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	3	2	3	3	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	5	4	3	3	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	3	3	3	2	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	2	3	2	1	5	5
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	1	1	1	4	2
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	5	4	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	2	3	3	4	5
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	3	1	3	2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	3	3	4	3	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	3	3	4	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	4	4	3
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	3	3	3	3	3
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	1	3	2	2	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	3	5	4	3	5	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3	3	3	5	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4	4	4	4
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	3	4	5	4	2	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5	5	5	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	5	5	4	5	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	3	4	4	4	3	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	5	5	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	2	4	3	4	4
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	3	5	5	4	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	3	2	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	4	5	4	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	4	3	4	4	5	5
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	5	5	4	5	5	5
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	5	5	5	5	4	5
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	2	1	2	2	4	5
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	4	3	3	3	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	3	3	3	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	3	3	3	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	2	4	3	3	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4	4	5	5
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	4	3	3	3	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	3	4	5	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	5	4	3	5	5
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	3	1	1	1	4	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	4	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	3	5	2	4
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	3	3	4	2	2
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	3	3	3	5	3	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	3	4	4	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	3	3	5	5	5
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	3	4	4	4	4	4
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	4	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	4	4	4	3	4	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4	3	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5	4	3	2	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	3	3	3	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	1	1	1	1	1
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	5	4	5	5	5	5
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	2	2	2	3	4	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	1	2	2	1	3	2
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	5	4	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	2	3	2	5	5	5
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	3	3	3	4	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	3	2	2	4	3	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	4	4	4	5	5
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	2	3	5	3	2	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	3	3	3	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	2	4	3	5	5
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	5	4	5	4	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	3	3	4	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	3	3	3	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	5	4	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	3	2	2	2	2	2
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	3	4	4	4	4	3
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	5	3	4	4
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	3	3	5	2	4	4
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	3	3	4	4	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	3	2	3	4	3
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	5	3	3	3	3	3
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	3	4	3	5	4	5
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	3	5	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	C.1	C.2	C.3	C.4	C.5	C.6
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	3	3	4	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	1	1	1	1	3	1
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4	5	5	5	5
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	3	3	4	3	3	5
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	5	4	4	5	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	5	4	5	4	4	4
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	3	3	3	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	2	2	3	1	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	3	2	4	2	5	4
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	3	2	4	2	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	2	3	5	5
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	2	3	2	5	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	1	1	1	1	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	4	4	4	5	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	3	2	3	5
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	5	3	3	5	5

ANNEX V –LIKERT SURVEY RESULTS – SECTION D

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	2	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	5
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	4	3	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	4	3
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	3	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	4	5
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	3	3	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years		4	4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	5	3	4
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	2	2	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	4
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3	4
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	5	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	3	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	3	2	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	4	4	5
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	3	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	4	4
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	4	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	3	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	3	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	3
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	5	5	5
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	2	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	5	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	3	4
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	3	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	4	4	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	4	5
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	3	3	4
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	3	3	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	5	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	4
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	3	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	3	5	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	3	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	5	5	5
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	3	4	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	3	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	4	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	3	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	5
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	4	4	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	3	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	2	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	3	4	5
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	3	4	5
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	3	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	5	5
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	3	3
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	4	4	5
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	3	3	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	3	2	3
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	3	4	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	4	4
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	3
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	4	4	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	2	2
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	3	3	4
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	4	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	3	4
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	4	4	4
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	4	4	4
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	D.1	D.2	D.3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	5
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	3	4
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	3	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	3	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	3	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	2	2
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	5	4
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	5	3	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	2	5

ANNEX VI –LIKERT SURVEY RESULTS – SECTION E

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	4	4	3	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	1	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	3	3	2
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	4	3	4	5	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	1	1	1	3
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	3	2	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	4	3	5	3
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	2	4	2	3	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	5	3	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	5	3	3	4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	2	3	2	3	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	4	3	2	3	2
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	2	3	3	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	5	5	4
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	2	3	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	3	3	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	4	2	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	5	4	4
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	4	4	3	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	3	1	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	3	4	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	4	3
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	5	3	4	3	2
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	4	4
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	4	3	3	3	3
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	3	3	3	3
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	5	3	3	3
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	4	3	4	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	5	3	2	2
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	2	4	4	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	3	4	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	2	4	4	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	1	3	4	2	3
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	3	1	4	3
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	5	4	3	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	2	2	1	1	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	3	4	4	4	5
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	5	3	4	3	3
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	4	4	3
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	3	3	3	3	4
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	2	5	3	1	3
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	4	4	3	4	2
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	1	4	3	5	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	3	4	4	4	2
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	3	4	3	5	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	5	5	5	4
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	4	5	5	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	4	3	4	3
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	5	5	5	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	4	2	3	3
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	4	4	5	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	4	4	3	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	5	5	5	5	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	3	5	3	3	3
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	3	5	5	4	2
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	5	5	5	5	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	2	3	1	2	3
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	3	4	3	2	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	1	2	3	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	2	4	3	3	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	5	4	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4	4	5
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	4	5	3	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	1	1	2	2
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	5	3	3	3
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	2	3	1	3	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	5	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4	3
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	2	4	3	4	3
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	5	3	3	3	2
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	2	3	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	5	3	4	4
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	3	4	4	3	3
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	4	5	5	4	3
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	5	3	2	5	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	4	3	2	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	4	4	4	3
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	1	1	1	1	2
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	4	3	3	3	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	3	3	3	5	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	5	1	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	5	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	5	2	3	2	3
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	3	3	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	4	4	5	4	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	4	4	4	2
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	2	4	4	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	5	3	3	3	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	2	3	5
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	4	5	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	5	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	2	4	1	3	2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	3	3	2	2	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	4	4	4	4	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	2	4	4	5	3
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	2	4	3	4	3
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	3	5	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	4	3	2	3
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	4	3	3	3
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	4	5	5	3	4
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	3	3	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	E.1	E.2	E.3	E.4	E.5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	4	4	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	3	3	3	1	3
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	5	5	5	5
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	2	4	5	4	2
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	5	5	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	5	5	5	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	3	3	4	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	5	2	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	4	2	3	4
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	1	1	3	2	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	3	4	4	3
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	3	4	5	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5	5	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	4	4	5	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	4	5
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	2	2	2	3	1

ANNEX VII –LIKERT SURVEY RESULTS – SECTION F

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	4	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	4	4
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	4	5	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	3	3	3
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	5	4	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	5	4	4
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	3	3	4	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5	4	4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	4	4	5
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	4	4	4	4
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	5	4	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	5	5	5
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	4	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	4	5	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	4	3
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	5	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	5	4	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	5	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	4	4	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	4	5
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	5	5	4	5
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	5	4	4
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	4	4	5	5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	3	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	4	4	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	5	5	5
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	5
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	5	5	4	5
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	5	4	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	5	5	5	5
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	4	4	3
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	4
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	4	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	5	5	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	5	1	5	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	4	5	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	3	3
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	4	4	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	4	4	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	3	5	3	3
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4	3	4
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	5	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	5		4	5
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	2	4	4	2
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	4	5	5	5
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	3	4	4	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	5	5	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	5	5	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	3	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5	5
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	5	5	4	4
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	4	5	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	1	4	2
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	4	4	4
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	5	5	5	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5	4	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	4
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	4	5	5
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	4	3	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	5
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	4	5	4	3
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	5	5	5	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	5	3	4	
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5	4	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	5	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	5	5	4	3
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	4	4	3	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	5	4	3	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5	5	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	3	4	4	4
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	5	5	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	4	4	4	4
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	4	4	4
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4	4	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	5	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	5
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	5	5	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	4	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	3
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	4	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	4	4	4	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4	3
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	4	5	3	3
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	5	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	5	4	4
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	3	4	4
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	4	5	5	5
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	5	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	F.1	F.2	F.3	F.4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5	5	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	5	5	4
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	3	3	4	5
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	4	4	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	5	5	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	3	3	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	5	5	5
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	5	5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	4	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5	5
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	5	4	5

ANNEX VIII –LIKERT SURVEY RESULTS – SECTION G

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	4	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	3	3
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	2	4	5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	3	3
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	3	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	2	4	3
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	5	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years			4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	3	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	3	3	4
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	1	2	1
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4	3
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	2	3	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	4	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	3
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	3	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	1	1
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	2	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	3	3
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4	4
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	4	4	4
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	2	4	3
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	3	3	4
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	2	3	2
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	3	4	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	3
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	3	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3	3
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	4	5
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	2	4	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	4	5
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	2	5	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4	4
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	3	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	2	3	3
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	4	5	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	2	3	2
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	3
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	2	3	1
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	2	3
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	5	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	3	3	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	3	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	4	2
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	3	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	2	4	2
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	3	2	3
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	4	4	4
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	3	3	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	5	4	5
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	2	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	2	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	5	5
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	3	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4	4
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	3	4	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	4	5
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	4	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	2	4	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	3	5
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	2	2	2
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	3	3	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	2	2
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	2	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	3	3
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	3	5	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	5	3	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	3	5	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	2	3	2
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	3	4	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	2	3	3
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	3	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	1	4	2
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	3	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	3	5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	3	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	3	4	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	2	4	4
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	5	3	4
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	5	5	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	2	4	4
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	3	3
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	3	4	5
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	G.1	G.2	G.3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	5	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	3	3	4
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	3	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	3	2
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	3	3	3
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	3	3
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	3	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	3	1
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	5	5
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	3	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	2	3	3
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	1	4	2
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	4	5	5

ANNEX IX –LIKERT SURVEY RESULTS – SECTION H

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	4
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	3	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	4
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	5
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	5
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	5	5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3
Male	31 to 40	Pilot	Regulatory Body	16 to 20	3	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	3	3
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	3
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	2	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	1	1
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	5
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	2	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	2	3
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	3	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	3	3
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	3	2
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	3	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	3
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	3
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	4	2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	3
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	3	2
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	5	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	2	3
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	3	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	2	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	3	2
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	1	5
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	2	4
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	4	5
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	3	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	2	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	2	2
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	5
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	2	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	1	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	5
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	5
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	3	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	3	4
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	4	5
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	3	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	2	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	2
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	3	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	3	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	3	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	3	4
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	4	4
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	5	3
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	3	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	3	5
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	3	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	4
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	3	2
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	3	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	4
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	3
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	3	5
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	H.1	H.2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	3	3
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	3	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	3	5
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	1	1
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	2
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	3
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	5

ANNEX X –LIKERT SURVEY RESULTS – SECTION I

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	4
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	4
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	5	5
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	5	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4
Male	31 to 40	Pilot	Regulatory Body	16 to 20	5	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	5	
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	3
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	2	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	3	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	1
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	5	4
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	3
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	5	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	4	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	3	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	3	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	4	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	3	3
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	2	1
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	2	2
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	2	4
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	3
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	5	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	3	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	3

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	5	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years		4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	3	1
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	2	4
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	5	5
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	4	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	5	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	5	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	2
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	5	5
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	4	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	4	3
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	5
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	3	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	5
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	4
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	2	3
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	4	4
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	2
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	3
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	2
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	4	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	4
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	4
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	4	3
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	5	5
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	4
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	2
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	3	5
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	3	4
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	5	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	3
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	5
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	5	4
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	5	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	I.1	I.2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	3	3
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	3
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	3
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	3
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	4
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	2
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	4

ANNEX XI –LIKERT SURVEY RESULTS – SECTION J

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Female	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5
Male	41 to 50	Class Surveyor	Regulatory Body	16 to 20	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	4
Female	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	3	5
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	4	4
Male	31 to 40	Cargo / Bunker Surveyor	Owner Representative	16 to 20	3	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5
Male	31 to 40	Pilot	Regulatory Body	16 to 20	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	11 to 15	4	4
Male	41 to 50	Ship Local Agent Representative	Owner Representative	6 to 10	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	5	5
Male	51 to 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	5	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Male	Over 60	Ship Manager	Owner Representative	Over 20 years	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4
Female	31 to 40	P&I Club Representative	Owner Representative	0 to 5	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	3	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	0 to 5	3	2
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5
Female	41 to 50	Pilot	Regulatory Body	Over 20 years	5	5
Female	51 to 60	Pilot	Regulatory Body	Over 20 years	4	5
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	4	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	3	3
Female	31 to 40	P&I Club Representative	Owner Representative	6 to 10	4	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	0 to 5	3	5
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	Over 60	P&I Club Representative	Owner Representative	Over 20 years	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5
Female	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	5	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	4	4
Male	21 to 30	Ship Local Agent Representative	Owner Representative	0 to 5	2	3
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	16 to 20	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	5	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4
Male	51 to 60	P&I Club Representative	Owner Representative	Over 20 years	4	5
Male	41 to 50	P&I Club Representative	Owner Representative	0 to 5	5	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	16 to 20	4	5
Male	Over 60	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	5
Male	51 to 60	Maritime Lawyers	Owner Representative	Over 20 years	3	3
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	5
Male	31 to 40	Ship Manager	Owner Representative	11 to 15	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	4	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	3	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	4
Female	51 to 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	3
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4
Male	31 to 40	Port Authority Personnel	Regulatory Body	6 to 10	5	5
Male	21 to 30	Ship Local Agent Representative	Owner Representative	6 to 10	4	4
Male	41 to 50	P&I Club Representative	Owner Representative	11 to 15	5	5
Male	51 to 60	Class Surveyor	Regulatory Body	Over 20 years	3	3
Male	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Ship Local Agent Representative	Owner Representative	6 to 10	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	5	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	4	4
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	5
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	5	5
Male	41 to 50	Maritime Lawyers	Owner Representative	Over 20 years	5	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	5	4
Male	51 to 60	Marine Surveyor	Owner Representative	Over 20 years	3	4
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	5	5
Male	21 to 30	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	6 to 10		3
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	2	5
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5
Male	Over 60	Marine Surveyor	Owner Representative	Over 20 years	5	3
Male	Over 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	4	4
Male	51 to 60	Ship Manager	Owner Representative	Over 20 years	4	5
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	2	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5
Male	31 to 40	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	6 to 10	5	4
Male	21 to 30	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	11 to 15	3	3
Female	31 to 40	Maritime Lawyers	Owner Representative	6 to 10	4	5
Male	41 to 50	Port Authority Personnel	Regulatory Body	16 to 20	3	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	3	4
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	16 to 20	5	5
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	4	5
Male	41 to 50	Class Surveyor	Regulatory Body	11 to 15	4	4

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Male	41 to 50	Pilot	Regulatory Body	Over 20 years	3	4
Male	41 to 50	Cargo / Bunker Surveyor	Owner Representative	11 to 15	5	5
Male	51 to 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	3	5
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5
Female	41 to 50	Port Authority Personnel	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	5	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4
Male	41 to 50	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	3	4
Male	51 to 60	Port Authority Personnel	Regulatory Body	11 to 15	4	4
Male	Over 60	Flag Administration Officer / Marine Safety Investigation Officer	Regulatory Body	Over 20 years	4	4
Male	21 to 30	Cargo / Bunker Surveyor	Owner Representative	0 to 5	4	5
Female	31 to 40	Port Authority Personnel	Regulatory Body	11 to 15	5	5
Male	21 to 30	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	4	5
Male	21 to 30	Maritime Lawyers	Owner Representative	0 to 5	3	3
Female	41 to 50	Maritime Lawyers	Owner Representative	16 to 20	5	4
Male	51 to 60	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	Over 20 years	3	5

Gender	Age Group	Occupation	Grouped Occupation	Years in Maritime	J.1	J.2
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	4
Male	41 to 50	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	16 to 20	4	5
Male	31 to 40	P&I Club Representative	Owner Representative	6 to 10	5	5
Male	41 to 50	P&I Club Representative	Owner Representative	Over 20 years	5	4
Male	41 to 50	Marine Surveyor	Owner Representative	Over 20 years	4	4
Male	51 to 60	Pilot	Regulatory Body	Over 20 years	4	4
Male	31 to 40	Marine Surveyor	Owner Representative	11 to 15	4	4
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	0 to 5	4	5
Male	31 to 40	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	11 to 15	4	5
Male	41 to 50	Class Surveyor	Regulatory Body	Over 20 years	2	3
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	11 to 15	4	5
Male	Over 60	Port Authority Personnel	Regulatory Body	Over 20 years	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	5
Male	41 to 50	Master Mariner / Deck Officer / Chief Engineer / Engine Officers	Owner Representative	Over 20 years	4	5
Male	31 to 40	Naval Architect / Marine Engineer / Mechanical Engineer	Owner Representative	6 to 10	5	3
Male	31 to 40	Class Surveyor	Regulatory Body	16 to 20	5	4